United States Court of Appeals

FOR THE EIGHTH CIRCUIT.

No. 17,441.

CIVIL.

JOHN DEERE COMPANY OF KANSAS CITY,
a Corporation and DEERE & COMPANY,
a Corporation,
Appellants,

vs.

WILLIAM T. GRAHAM, and GRAHAM PLOW, INC.,
Appellees.

**APPEAL FROM THE DISTRICT COURT OF THE UNITED STATES
FOR THE WESTERN DISTRICT OF MISSOURI,
WESTERN DIVISION.**

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[482] MORNING SESSION, MONDAY, MAY 7, 1962

CLARENCE T. FISHLEIGH, resumed the stand and testified further as follows:

Direct Examination (Continued) by Mr. Morris.

Q. Mr. Fishleigh, at the close of testimony on Friday of last week, I believe we had just completed an explanation of the disclosure of the Traeger patent. I wonder if you would now turn to the Petersen patent, which is another example of the prior art set out on the chart, Defendants' Exhibit 11, and explain that disclosure, please.

First, I would like to call the Court's attention to the official translation of the Petersen patent which is contained in the book of prior art that you have. Throughout that patent there is a word shown as horseshoe which undoubtedly was intended to be horse hoe. The translation inserted an "s" that obviously wasn't intended to be there, so I have marked through the letter "s" wherever that appears throughout the translation.

Go ahead, please, Mr. Fishleigh.

A. The reproduction of the Petersen drawing from the Danish patent 57,391 is shown in the lower left-hand [483] corner of the chart, Defendants' Exhibit 11. In addition to that there is on the easel a colored enlargement of that same figure, in fact, of the entire sheet of drawings from the Petersen patent, marked for identification as Defendants' Exhibit 16. As has just been pointed out, this device is a resilient mounting means for what the patent describes as a horse hoe, undoubtedly meaning a hoe or cultivator type structure drawn by a horse. Looking at Defendants' Exhibit 16 beneath there is a frame, Fig. 3 colored in violet. That is a transverse member of the frame of the device upon which the horse hoe and hoe member is being mounted.

Attached to that frame member 3 is a fixed member consisting of two parts, both of which are colored yellow in this colored enlargement, and it consists of the parts—primarily of the part 4 but also includes the plate 13 which is fastened to and clamps the fixed member 4 to the frame member by means of the bolts 14 and the nuts 15.

The sides of that member 4 extend to the left as we see it in this figure and provide a channel shaped member or opening or way into which the shank and the hinged member are mounted. There is a pivot pin 16, colored light blue, which extends from the [484] flange on one side to the flange on the other side. That is one which would be behind the showing as it appears in this drawing.

Mounted upon that pivot pin is a hinged member 2 or shank attaching member, and that structure is colored green, in part dark green and in part light green. That hinged member extends in a substantially vertical direction, as shown in this joint, and as a longitudinally or vertically extending face on its left side. Also it has members extending to the side marked 7, such that it provides a way or channel shaped portion or opening into which the shank of the tool, 1, is positioned. And I might say that the numeral 8 points out the side of the fixed member, the flange and one side of it, and there is a similar one on the other side. The shank 1 is positioned against the hinged member with the right-hand face of the shank against the left-hand face of the plate-like portion of the hinged member into substantially a continuous contact.

The fastening for the shank consists of a stirrup member plus a bolt, the stirrup member being numbered 5 and the bolt 6. In other words, the shank is inserted through the opening in the stirrup member and then the bolt is tightened down so as to press the [485] shank against the vertically extending face of the hinged member 2.

Then there is a compression type spring, number 9, which is positioned between the fixed member and the right-hand side of the hinged member 2, as shown here, and is colored orange. On the surface of the hinged member there is a little boss that positions that spring, and out operating through the boss on the fixed member is a screw 11 with a lock nut 10 for adjusting the tension of that spring. In other words, if the bolt 11 is screwed in so as to move its end to the left, as shown in this figure, the spring will be compressed and will exert a greater pressure upon the hinged member, and will resist any movement of the shank with a greater force.

There is in addition a member or a portion of the fixed member 4 marked 18, which provides on its left-hand surface a stop surface or stop member, and the contour or shape of the hinged member 2, the dark green member, is such that there is a portion 17 referred to in the translation of the Petersen patent as a beak, 17, because of its perhaps similarity in shape to the beak of some bird or animal, and the arrangement is such that as the pressure of the spring is exerted upon the member 2 it tends to pivot in a [486] counterclockwise direction as we see it in this figure until the surface of the beak or portion 17 of the hinged member comes in contact with the surface of that portion 18 of the fixed member, and those two surfaces, in meeting, exert or provide a stop so that the hinged member and the shank are positioned in the proper operating position for the tool. In this instance the tool or carriage is moved. Cultivator is moved from left to right as we see it in this view, so that in case an obstruction is encountered the bottom portion of the shank 1 would be moved to the left and upward, and that movement would be resisted by the spring action, that is, the action of the spring 9. But when the obstruction has been passed the additional energy stored in the spring 9 would move the hinged member and the shank back until the surfaces 17 and 18 contacted, thereby again positioning the tool in its proper operating position or in that position which has been referred to here as the home base position for the device.

Q. Mr. Fishleigh, would you point out there on the drawing how it is that the beak member clears the portion 18 of the fixed member as the shank and the pivoted member start to pivot. A. Well, as I run my points from the center of the pivot [487] member to the surface 18, I find that the surface 17 is entirely below a line from the center of the pivot point perpendicular to the surface 18, so that as the hinged member starts to rotate in a clockwise fashion as it would if an obstruction was encountered, all portions of the surface 17 moving in an arc about the center of the pivot point move away from that surface 18.

Q. In the Petersen disclosure, Mr. Fishleigh, how many of the mechanical elements as set out on the chart, Defendants' Exhibit 11, do you find in the Petersen disclosure? A. All seven of the elements as set forth on the chart, Defendants' Exhibit 11, are present in the Petersen structure.

Q. Now, I notice in the element 7, as it is set out on the chart, which is the spring means, as it is set out there is there any particular mention of the spring rod element which we find in some of the structures of the art? A. No, not specifically. In this instance, as indicated by the color, I have referred to the spring means broadly as including the actual spring itself and the means for connecting it in operative position.

Q. Now then, in the Petersen structure, is there a rod [488] element, as such, or does the spring operate in some other fashion? A. Well, there is no rod which extends through from one end to the other of the spring. There is a boss colored brown near the upper end of the hinged member 2, and then at the other end there is just a flat, seemingly washer-type device against which the screw 11 bears, so that being a short enough spring apparently it is contemplated that the spring itself will maintain itself in proper position without the necessity for a rod to keep it in proper alignment.

Q. The brown portion on the hinge member 2 which you have referred to as a boss, and then the brown portion on the fixed member, which is the bolt and lock nut, do those elements act to position the spring in this particular structure? A. They act to position it and also serve that function of the rods and nuts and washer in some of the other structures we have considered of varying the pressure or force upon the spring in its normal operating position.

Q. For example, in Graham 811, which has previously been considered, if we wanted to vary the tension on this spring how would that be done? A. You would simply tighten the nut at the top to vary— [489] really in that instance I would think we would more properly say vary the compression of the spring.

Q. All right. And in the Petersen structure how is the spring tension adjusted? A. By tightening the bolt or screw 11.

Q. Just one other thing about Petersen, Mr. Fishleigh. The element 6 which you have described as a bolt that goes into the hinge member through the stirrup or loop element, is that a bolt of the kind which goes all the way through the hinge member and the shank to fasten in the way that we have seen some of these other bolts, or does it operate as a set screw? A. No, it does not go all the way through. That bolt stops at the surface of the shank, and as it is tightened, screwed into the threaded opening in the portion 5 it simply exerts a pressure tending to push the shank against the other surface of the hinged member 2. One thing which I perhaps did not point out in my general explanation, and that is that the member 2, that is, the vertically extending plate-like portion of the member 2 is in this structure between the shank and the fixed member.

Q. Now then, just one other little point there. We have observed previously here last week a Jeoffroy type hinge member, which is identified as Plaintiff's Exhibit [490] D-1, which has in it at the rear a set screw passing through the loop or stirrup element and contacting the shank. Would that set screw in this Jeoffroy device operate substantially in the same way as the set screw in the Petersen structure or the bolt 6 in the Petersen structure as you have described it there? A. That is correct. It is the same general type of operation.

The Court: That is used solely to hold the shank?

Mr. Morris: To hold the shank onto the pivoted member, attach it to the pivoted member.

Q. (By Mr. Morris) Mr. Fishleigh, I would like you now to turn your attention to the Glencoe prior art device, which is shown on the chart, Defendants' Exhibit 11, and also shown on the colored enlargement of Glencoe drawings, Defendants' Exhibit 17. Before you start your discussion, in connection with the charts which are on the easel, I would also like for us to consider the Glencoe device, which has been marked as Defendants' Exhibit 3 and is in pursuant to the stipulation, Your Honor.

Now first I would like to ask you whether or not the drawings of the Glencoe structure which are [491] enlarged and colored here have been made under your supervision, in your office, to reflect the structure of the Glencoe clamp as shown in the physical exhibit, Defendants' Exhibit 3. A. Yes, those two drawings, that is, the originals of which these are photostatic reproductions, were made in my office under my immediate direction and supervision and using this structure, Defendants' Exhibit 3, as a base from which to work.

Q. All right. Now then, using the drawings and the clamp itself whenever necessary, would you please explain the structure and functioning of the Glencoe device. A. The smaller reproduction of the two figures of Glencoe are shown in the bottom row of figures on chart, Defendants' Exhibit 11, next to the right-hand end, that is, Traeger is at the right-hand end and these drawings are next to that.

Referring to the larger drawings, Defendants' Exhibit 17, this Glencoe prior public use structure is a structure for use as a chisel plow for plowing operations and the body of the plow or frame of the plow, as shown here, includes a transverse extending beam member marked "C" and colored violet. It is an angle iron type of device in this particular structure.

There is then a member 10 colored yellow, [492] which is fastened to the two flanges of that angle iron member by means of a pair of bolts, also colored yellow but not numbered on these drawings. The fixed member has a pair of side portions numbered 6, which form a channel-shaped opening or way into which the hinged member and the shank project and are supported and kept in position. At the bottom of those two side members are what could well be called downwardly projecting ears and those two ears have a hole 7 into which a pivot pin 8 is positioned, that pivot pin in the drawings, as in previous drawings, being colored light blue, and it is retained in its position by cotter keys at either end.

Then there is a pivoted member, marked 21, which also has a boss or ear portion and a hole mating with the pivot pin 8, so that that member 21 can rotate in a clockwise or counterclockwise direction about the pivot pin 8.

The upper portion of that hinged member or shank attaching member has a flat longitudinal surface extending in its left-hand end well past the pivot point close to the—well, about two-thirds of the way toward the far end of the hinged member, and the shank of the tool, marked 18, is carried upon that—that is, the upper forward end is carried upon that [493] flat longitudinal surface with the lower surface of the shank, of that portion of the shank, in relatively intimate contact with the upper surface of the hinged member. The shank is fastened to and supported upon this hinged member by two means, 1, a screw 32, colored light green, passing through a hole in the shank relatively close to its forward end, that is, the right-hand end as it appears in these drawings. In addition to that there is a stirrup 29, which extends upwardly and over from side to side of the rear or left-hand end of the hinged member 21. The shank is inserted through that stirrup member into proper position and then the bolt 32 is inserted to fasten the shank member to the hinged member. Projecting downwardly from the portion of the fixed member and extending into that opening or way between the two side flanges 6 of the fixed member is a projection or boss, unnumbered in this drawing but shown in cross section and colored yellow, as is the rest of the fixed member. Extending upwardly from the upper surface of the longitudinally extending face of the hinged member at a point slightly forward or to the right of the end of the shank, as it is shown in Fig. 2 on Defendants' Exhibit 17, is an upwardly extending boss marked 36 and colored dark green. The arrangement is such that [494] those two bosses contact each other as the right-hand end of the hinged member is pulled upwardly by spring action, which I will refer to in a moment or so, and the hinged member and the shank and the tool are thereby positioned in proper operating position to start the operation. At the front end of the fixed member and at the upper portion thereof there is a bearing support 11 on either side of the fixed member, which provides a pivotal support for a spring supporting bracket 13. In other words, 13 pivots about the pivot pin 12, that pivot pin being integral with the part 13 and pivots in the seat 11 or seats 11 at opposite sides. A spring—in fact in this instance a pair of springs, 17 and 17-A, colored orange, one smaller than the other, and telescoped one over the other, they both seat a cavity in the upper portion of this seat member 13. Then there is a spring rod that extends through the spring and at its lower end extends through an opening in the forward end of the pivoted member and there is held by means of its head and a washer. At the upper end is another washer marked 18 and a nut unnumbered which serves to adjust the tension or compression which is desired upon the spring members, so that once adjusted the [495] springs tend to lift the right-hand end of the hinged member and rotate that hinged member in a counterclockwise direction, which is done until such time as the lug 36 on the hinged member encounters—that is, the upper surface, upper part of that lug 36, encounters the bottom of the lug on the fixed member, unnumbered but immediately above the lug 36, as is shown in Fig. 2. At that point, as I have indicated, the tool is in proper operating position with the point of the tool at such position as is desired for satisfactory operation.

The amount of compression which is desired in the springs is then obtained by tightening up the nut and the washer 18 to give a steady operation under such normal loads as may be desired, but leaving the device so that if an obstruction is encountered in the use of the tool the tool 20 will move upwardly and backwardly, pivoting about the pivot pin 8, and at the same time pulling down the right-hand end of the hinged member against the resistance of the spring, and thereby at the same time storing additional energy in that pair of springs.

Once the obstruction has been cleared and the tool is relatively free to move back to its normal operating position, the force of the springs pulls the left-hand end up, rotating the hinged member and the [496] shank in a counterclockwise direction until once more the lug 36 encounters the bottom of the corresponding lug on the fixed member and the tool is positioned again in its home base or normal operating conditions.

Q. Now then, Mr. Fishleigh, would you step here to the table just a moment where we have a Glencoe clamp, Defendants' Exhibit 3, and let's for purposes of demonstration remove the nut and washer at the top and remove the two springs so that we may demonstrate the pivotal action of this device. A. Well, the spring tends to hold what—may we turn it around so that as we look at it it is in the same position as the drawings. The spring tends to pull the fixed member and shank in a counterclockwise direction—

Q. You mean the pivoted member and shank? A. Yes, the hinged member or shank attaching member and shank in a counterclockwise direction and does move the device until this lug 36 upon the hinged member encounters the lug on the fixed member, and it is there held. When and if the tool hits an obstruction it will tend to rotate the hinged member and shank in a clockwise direction, pulling down upon the right-hand end and compressing the springs into some such position as I am now holding it, with the lug 36 separated from [497] the mating lug on the fixed member. That condition persists until such time as the obstruction is cleared when the force on the tool end is released and the spring pressure takes over again, pulling the device in a counterclockwise direction about the pivot point or pivot pin 8 until the two stop members again engage in the proper operating position.

Now, if I may I would like to take the hinged member loose. Now, referring to the hinged member and again looking at it in the same orientation as we have in Figs. 1 and 2 on Defendants' Exhibit 17, it will be noted that there is a long, longitudinally extending plate member with a sizeable longitudinal face on its upper end. The shank has been inserted through the stirrup member 29 with a degree of clearance, of course, in order to get it through, because in normal manufacturing tolerances there is a variation in the thickness of a shank of this sort, and of course some degree of variation or tolerance in providing a stirrup of this sort. Then toward the rear of the shank and to the rear of the pivot—may I start over. Toward what is in operating position the front of the shank and in front of the pivot pin there is a bolt marked both on the model and in the drawings 32, which extends through a hole in the pivoted [498] member and through a hole in the shank and serves to clamp the shank to the pivoted member, and as I have now disassembled the device, but in assembly the front upper end of the shank is pushed through the stirrup and into position so that the bolt hole in the hinged member and in the shank mate and then the bolt is attached and tightened up to provide a clamping arrangement, and the two together serve to hold the shank in close contact and to prevent any substantial movement of the shank away from the hinged member, and of course there is a hole with sort of—sort of an elongated hole with a hole in the spring for the spring bolt, the elongated or tapered formation being such to prevent interference—well, as this stands there and as that moves (demonstrating) there is relative movement between the spring rod and the hinged member.

Q. Now then, one other thing, Mr. Fishleigh, I would like for you to point out on this particular model. You have mentioned the spring seat being mounted upon the forward projection of the main body of the clamp or fixed part of the clamp. Will you point out on the model a forward projection which mounts the spring seat. A. Yes, the upper and forward projection does provide [499] a seat, a pivotal seat on the drawing Fig. 1 on Defendants' Exhibit 11, and this spring seat has a hole through it for the rod. It has a cavity on its upper surface for the bottom of the springs and then a pivoting shank portion marked 12, both on the model and on the drawing, which mates or pivots in the seat and permits a rocking movement of that spring seat to adopt it to changes in position as the hinged member moves in a clockwise or counterclockwise direction about the pivot pin 8.

Q. To demonstrate that rocking movement of the spring seat a little more fully, Mr. Fishleigh, as the spring rod extends upwardly through the device in operating position, as the shank and pivoted member pivot, is the line of spring, in relation to the other parts, changed? A. Yes. If I may just illustrate with my fingers, and in an extreme condition, although the actions are the same, as this representing the hinged member with my fingers as it pivots about the pivot pin, the bottom of the spring rod would move downwardly and to the left as we see it in Figs. 1 and 2. In other words, as the hinged member pivots about the pivot point, the movement of this head 16 is not only down but to the left as the hole or the end of the hinged [500] member moves in the arc of a circle.

Q. Now, considering the Glencoe structure as shown in the drawings, and as shown in the actual clamp, Defendants' Exhibit 3, which of the elements as set forth on the chart, Defendants' Exhibit 11, do you find present in that structure? A. I find each of the seven elements present in the Glencoe structure.

Q. Mr. Fishleigh, I notice that here in the various structures we have considered during the past several days, we have noted various types of plow frame beam members, including a square bar, such as in the Deere 650, an I-beam type as in the Graham 811, and a square tubular type beam, as in the Deere 100, and you have pointed out that in Glencoe here the frame member—the plow frame member is of an angle iron type. Are all of those common steel or iron forms available in ordinary commerce? A. Yes. They are all standard steel forms which can normally be purchased in various sizes and various strengths, that is. various sizes, for instance, of the angle as we see it here and various thicknesses of the flange, depending upon the particular purpose for which it is required.

Q. And would that be true of all of the different types [501] of frame members or forms? A. Yes. All of those, at least, that we have considered here.

Q. All right. I see we have one further segment of prior art, or further prior use, demonstrated or contained on the chart, Defendants' Exhibit 11—

The Court: Before we go into that I would like to ask a question relative to the Glencoe device.

Is this a patented device?

Mr. Morris: Yes, Your Honor, there are two patents in existence on variations of the form as demonstrated here, and then there is a third patent on a later design of the same Glencoe structure.

The Court: That patent was prior to the 811 patent?

Mr. Morris: No, sir, the 811 structure antedates the Glencoe.

The Court: Glencoe antedates 798?

Mr. Morris: Glencoe antedates 798.

Mr. Fishburn: If Your Honor please, I would like to make one statement with respect to that. The application for the patents for this Glencoe device were filed after the filing date of the 798 patent. That might become important later, but Mr. Morris made the broad statement that the Glencoe was prior to 798. [502] We admit that it was used prior, over a year prior to the filing of the 798 patent. That is all we admit.

Mr. Morris: That is entirely acceptable, Mr. Fishburn. I don't want to misrepresent the chronology in any way whatsoever. Your Honor, I think the record will be clear that the Glencoe structure itself antedates the 798 patent, and the 798 application date. We do not contend that any of the Glencoe patents, either the issuance of them or the filing dates of the applications, precede the 798 filing date. We don't regard that as of any importance. Does that answer the Court's inquiry in full?

The Court: Yes.

Q. (By Mr. Morris) Now then, Mr. Fishleigh, I would like to turn to a consideration of the Jeoffroy SC-580 prior use structure as shown on the chart, Defendants' Exhibit 11. Do you have enlargements of the drawings of that structure? A. Yes, I have an enlargement of three figures of that structure, which I have just placed on the easel, and which sheet of drawings is marked Defendants' Exhibit 18.

Q. Now then, have you also considered and studied the Jeoffroy SC-580 clamp as shown here and marked Defendants' Exhibit 2, which is covered by the stipulation? A. Yes, I have considered it.

[503] Q. Have the drawings as shown on the colored enlargement, Defendants' Exhibit 18, and as shown on the upper right-hand corner of Defendants' Exhibit 11, been made under your supervision in your office, using the actual Jeoffroy SC-580 clamp as a guide, or as the device could be drawn? A. That is correct. We started with a drawing from one of the preceding cases and added to that and modified it to wherever it seems desirable to make it more precisely conform to the clamp, Defendants' Exhibit 2.

Q. Are the drawings of the Jeoffroy SC-580 structure substantially in accordance with the actual Jeoffroy device, Defendants' Exhibit 2? A. Yes, I believe they are. I have checked them and they are certainly insofar as any features of importance here are concerned.

Q. All right. Taking the drawings and the actual device wherever necessary, will you please explain the structure and operation of the Jeoffroy SC-580 prior use clamp. A. The Jeoffroy SC-580 drawings appear upon the chart, Defendants' Exhibit 11, at the upper right-hand corner of the chart. Referring to Defendants' Exhibit 18, we find in this instance that this particular structure has been designed for use upon what is referred to [504] as an I-beam, sometimes called an H-beam, marked number 1 on these drawings and colored in violet. In this particular instance, at least, the structure is used in the form where the name I-beam would be most natural because it looks like a capital I, as we see it.

There is a fixed member colored in yellow and including those parts numbered 3, 4, 5 and 6 on this chart, being a two-piece fixed member, the lower part, part 3, having a flange which comes up over the lower front flange of the frame cross member or transverse member, and then an additional member 4 having a brace 5 which extends over the opposite flange, opposite side of the lower flange of the I-beam, and the two are fastened together by means of the bolts 6 to clamp the device upon the frame member. As shown, the portion of the fixed member which now remains attached to the other parts is the portion marked 3, and the part which we have removed is the clamping part 4 with the brace member 5 and the two bolts, one on either side of the bolts 6, as indicated in the drawing.

At the rear end of the fixed portion 3, or the portion 3 of the fixed member, are a pair of downwardly projecting ears, one on either side of the structure, those ears together with the [505] portion, part of the frame marked 3, serving to provide the sides of a channel shaped opening or way into which the shank 2 and the pivoted member to be described later project. Those ear portions are marked 26 and 27 and they serve to provide a bearing point for a transverse pivot pin 7, colored in light blue.

There is a shank attaching or hinged member marked generally as 8 and colored in green, and that has a lug or projection at the back end—

Q. The back end? Excuse me. Go ahead. I wasn't seeing it. A. —at the rear end of it as it is mounted in the plow, with a hole through and so arranged as to fit upon and pivot upon the pivot pin 7. It also has on the upper surface a longitudinally extending face marked 59 upon the upper surface of the longitudinally extending plate portion of substantial width as shown here in Fig. 3, and extending from a point above the pivot pin over almost to the—well, extending to the right-hand or forward end, except as interrupted by a boss to be referred to later.

The shank 2 is mounted upon the top of the hinged member and it has a lower face which corresponds to and is in contact with, in its normal position, with the upper face of the hinged member.

Now, the mounting means or attaching means [506] differs here from those we have seen in some instances, at least, before, is more of the general nature of the 811. There is on the upper surface of the hinged member 8 a boss unnumbered but colored dark green and to which I am pointing at the right-hand end in Fig. 2, and in the shank 2 in a position corresponding to the other boss, there is a depression, as I am not pointing to it in the shank, such that in normal position as shown in Fig. 2 the boss on the hinged member extends up into the depression on the shank and prevents any substantial longitudinal movement to the right or to the left or, for that matter, sidewise as shown here in Fig. 2 of these drawings.

Q. Taking the Jeoffroy device here, Mr. Fishleigh, will you demonstrate those lugs and recesses to the Court so that— A. Yes, the lug that I was referring to is the one I am now pointing to on the hinged member, and there is a depression up into the shank which mates—of course the position is different but the mating is the same, and while there is a degree of movement permitted, that movement is restricted or limited as to how far it can go.

Now, while we have the device open there is— [507] opposite the depression in the shank there is a boss on the shank, and that is the one shown in pink and projecting up immediately above the depression toward the right-hand end of the shank in Fig. 2 on Defendants' Exhibit 18. Then as also shown in the joint, Fig. 2, there is a depression in the bottom of the fixed member in a mating location as to this boss on the shank, and that is the hole to which I am now pointing at the end of the—toward the right-hand end of the fixed member as we see it in Fig. 2 on Defendants' Exhibit 18, and it likewise limits the amount of movement. So when we put them into position, in its operating position, the entire structure is retained in substantially normal operating condition.

Now, the hinged member, as we have noted perhaps in that model, is somewhat T-shaped, it has an extension to the right and left towards its front end or the right-hand end. That is shown here in Fig. 1, and a pair of spring bolts extends through holes in that T-shaped member and come up alongside of the shank and up through holes, corresponding holes in the—corresponding but slotted holes in the fixed member, and then up through a pair of coil springs. Now, those coil springs seat as shown here in Fig. 2 in seating locations upon the upper part of the fixed member, [508] and at the upper end of course there are the usual washers 10 and nuts 11 which can be adjusted to provide any degree of compression that is desired upon those springs.

Q. Mr. Fishleigh, I notice in this Jeoffroy SC-580 structure we have a washer formed in a manner to mate the upper end of the spring, and that on the fixed member we have a seat likewise formed in a manner to mate with the lower end spring. We have noticed that same type of thing in other devices here, such as the Graham 811, the Deere structure, and so on. Is that type of molding or form of the casting a more or less common thing in modern manufacture? A. Well, it has been for some time. There are two ways of treating a coil spring of this sort for a purpose of this general type. One is to grind off the end of it so that it is smooth and will seat upon a smooth surface. The other is to leave the end as it would be coiled, as it would come out when it is coiled, and just cut the wire or rod off, as in the case of this Jeoffroy spring that I am holding. Now, in case you do do that, and there is some advantage in it, if you do that then it doesn't provide a good seat on a flat surface, so that they simply make a washer, wherever the seat is, they make it of such a form to convert to a [509] flat bearing surface. Both of those I have known for—well, more years, I guess, than I like to remember.

The Court: I would like to ask a question on this device, the Jeoffroy device. It appears to me that the shank might bounce loose after it hit an obstruction there and is pulled down clockwise, and then the obstruction disposed of and the pressures taken off of the end of the tool. Of course these springs would bounce back up, but this shank being loosely positioned in there could have some tendency to bounce around and not get back in the recess provided for it on the fixed frame.

Mr. Morris: Would you like to direct your question to Mr. Fishleigh, Your Honor, or to me? I have some information about that personally, but perhaps it would be best to have Mr. Fishleigh's view about it.

A. I think unquestionably there is the possibility of that type of action. I have felt that about it myself. However, it is my understanding from those that I have seen and worked with that as a matter of fact while there is a force coming back, tending to pull the shank down in a way that would pull it loose here from the pivoted member or shank attaching member, that the balance of forces is such that the greater force is on the part of the springs because they have encountered and been [510] compressed as much as the plow went up or the tool went up, and that in all cases that I have encountered at least, although I have wondered how it happened or that it would happen, it does come back and the shank and the hinged member stay at least substantially together so that they don't jump loose at that point.

Mr. Morris: As a matter of factual information, without intending to testify at all, Your Honor, I think it is true that upon occasions in extreme circumstances it has bounced loose, and in that type of a situation the shank would pull rearwardly until the upstanding lug on the top of the shank came into a binding position here at the rear where it would hold in. But of course it would not be operative, not be intended to operate in that position, although, as Mr. Fishleigh says, that is an unusual circumstance.

Q. Has that completed your explanation of the Jeoffroy SC-580 structure, Mr. Fishleigh? A. I don't think completely.

Q. I believe there is another item or two that you need to mention. A. On the lower forward portion of the fixed member, as the upper part of the ways formed by the flanges at the two sides, there is a surface which has been marked 15 in these drawings, and that is the surface to which [511] I am now pointing on the model. It is a surface a little larger and a little wider than the shank and approximately square, about as long as it is wide, and on the upper surface of the shank there is a mating or contacting surface. That is the surface which has been colored red on the top of the shank, in Fig. 1, and the corresponding surface, that is, the end of it, which is all we see, surface 15, on the bottom surface of the fixed member in Fig. 1. Then in Fig. 2 we have colored just on the cross section of it the two surfaces which do contact over that area, and the arrangement is such that when the springs are tightened down in the initial setting of the device the shank is pulled up until its upper surface contacts with the bottom surface of the fixed member, and in that way the shank and its operating tool are positioned in normal operating position.

Then if an obstruction is encountered and the device is forced up to a position such as shown in Fig. 1, in which the hinged member has rotated about the pivot 7 and the shank has moved with it, as soon as the obstruction has been passed and the end of the tool released the springs tend to move the shank and the hinged member back until such time as those two surfaces, the one on the upper part of the shank and [512] the one on the lower part of the fixed member, come in contact and act as stop members to again position the tool in proper operating position.

Q. Mr. Fishleigh, is that stop construction there with the upper face of the shank contacting an underface of the fixed member quite similar to the stop arrangement provided in the old Graham 811 structure? A. Yes, quite similar.

Q. Would the contacting faces in the old 811 structure be somewhat greater surfaces? A. Yes.

Q. I wonder if that is shown on any of the drawings which we have already presented in evidence here? A. Yes, I have Defendants' Exhibit 14-C.

Q. That is the colored enlargement? A. Of sheet 3 of the 811 drawings, and it will be noticed that the extent of the red portion on the top of the shank is somewhat greater than the extent of the red portion on the top of the shank in Fig. 1 of Jeoffroy SC-580 structure, as shown on Defendants' Exhibit 18, and while not shown specifically here, the extent of the surface which contacts the shank in this 811 structure is coextensive with the red portion here on the top of the shank.

Q. That is, there is an undersurface or underface of the [513] fixed member which would correspond substantially with the area that you have marked red there on the top of the shank element? A. That is right.

Q. All right. Now, Mr. Fishleigh, considering the mechanical elements as set out on the chart, Defendants' Exhibit 11, which of those mechanical elements do you find present in the Jeoffroy SC-580 structure? A. I find all of them except the sixth one, the sixth one being the means for connecting the shank to the pivoted shank attaching member.

Q. Why is it that you have concluded that that element 6, that structural or mechanical element 6, is not present in Jeoffroy SC-580? A. Well, because of the floating arrangement, which we have just been discussing, which permits the shank to move under varying conditions and varying amounts relative to the hinged member.

Q. Is it your opinion that in the Jeoffroy structure there is not really a fastening means in the sense that it has been used as a mechanical element here on the chart, Defendants' Exhibit 11? A. That is correct. That is my view, that it is not, such a fastening means is not present in the Jeoffroy SC-580.

[514] Q. And is that the same type of thing which we have discussed in connection with 811, where you concluded that the fastening means was not present? A. That is correct.

Q. Now, Mr. Fishleigh, in the re-direct examination of Mr. Fenton a day or two ago some point was made as to a consideration of mechanical elements, item by item, or additional associated parts held in the hand or laying upon the table, as we now have this group of disassembled structures here that we have been discussing. But in your consideration of the prior art that we have just discussed, and in particular the consideration of mechanical elements as they are set out on the chart, Defendants' Exhibit 11, have those various mechanical elements been considered just one by one in isolation, or have they been considered in their proper association, as disclosed in the prior art structures and in the environment disclosed there? A. They have not been considered as isolated elements one by one. In fact, if so considered the field would be inexhaustible. But they have been considered here in an environment which is closely similar to and in some instances, in my opinion, identical to the environment in which those similar elements find themselves or are found in the structure defined by the [515] mechanical elements of the claims in the 798 patent.

Q. Thank you. Now. Mr. Fishleigh, I would like to turn our attention to a consideration of the mechanical elements as defined or as set out in the claims of the 798 patent.

* * *

Mr. Morris: * * * I would like to present in evidence some colored enlargements from that patent, and I believe the Court already has them on the desk. They have been marked as Defendants' Exhibits 21-A, B, C and D, and Mr. Fishburn—you have been handed copies [516] of those?

Mr. Fishburn: Yes.

The Court: Yes, here they are.

Mr. Morris: I would merely like to get them in evidence at this point because we will refer to them later on and they have a color scheme which is somewhat different than the color scheme that was used by Mr. Fenton on his charts earlier in the case.

(Defendants' Exhibits 21-A, 21-B, 21-C and 21-D were received in evidence.)

Q. (By Mr. Morris) Mr. Fishleigh, there is one other point I would like to inquire about on the prior art before turning to the claims. Of the prior art disclosures that we have just discussed there on Defendants' Exhibit 11, how many of them do you find with a fastening means consisting of a bolt and a loop or stirrup element for maintaining the shank and the pivoted member in their associated relationship? A. There are two of them in that category, sir.

Q. Which are they, please? A. The Rix patent 287,965, the Cobb patent, 284,278, and the Glencoe prior use structure.

Q. All right. Now then, which of those were cited by the Patent Office insofar as the file wrapper history of this patent reflects? The patent itself and the history? [517] A. Well, none of them.

* * *

Q. Now I believe there is another item here also which I was about to overlook that I want to take up before turning to the 798 mechanical elements as such. Have you prepared any further charts, Mr. Fishleigh, to demonstrate any other aspects of the mechanical elements or other aspects of the structure of the 798 clamp as shown by the prior art? A. Yes.

Q. Do you find in the prior art specifically means for attaching the shank of a ground working tool to a pivoted shank attaching member? A. Yes, I do.

Q. Have you prepared a chart to specifically point out those items? A. Yes.

[518] Q. And demonstrate them? A. Yes.

Q. Will you place that chart on the easel, please, sir. A. That chart has been marked for identification as Defendants' Exhibit 19.

* * *

Q. (By Mr. Morris) Now then, I see of course that that includes elements from the prior art that have already been discussed, or segments from the prior art that have already been discussed, and I wish you would make your explanation here just as brief as possible, Mr. Fishleigh, to point out this particular item or element, the fastening means.

Go ahead, please. A. In the upper left of the chart is the same picture of Dunbar that we saw in connection with Defendants' Exhibit 11, but only certain of the colors used here, and the fastening means, that is, the means for connecting the shank to the shank attaching member is shown in light green and consists of the bolt "g" and a washer and a nut unnumbered, in this instance just the single bolt, but it is supported by the width of the pivoted member on the one hand and the width of the end of the spring member and the washer [519] "E" on the other end.

The second one, the central one at the top of the chart, is a patent to Carter, 231,268, that was not previously discussed and I don't believe needs any great detail here other than to say that the end, the left-hand end of the shank as we see it in this Fig. 1 from the Carter patent, is placed in between the two side flanges of a member "G" as shown in Fig. 2 of this patent, and then through a bolt colored light green and not numbered or lettered in this view, those flanges are pulled together and grip the sides of the shank member to hold it or fasten it to this member "G", which is the pivoted shank attaching member, pivoting about the pivot "L" not shown in Fig. 1, but occurring up about the upper left-hand portion of the shank attaching member, as I am now pointing to it in Fig. 1, and the spring there is a little different form of spring but connected by a rod to the pin member "F" so that any tendency to pivot or rotate about this pivot point "L" is resisted by the tension of the spring.

The next structure is Cobb, which appears just above it now in Defendants' Exhibit 11, and all we need to say there is that there is in this structure a shank attaching member with a stirrup "v" at its [520] lower end through which the shank is inserted, and then bolted to the pivoted member by means of the unnumbered but light green colored bolt toward the upper end of the shank. That is quite similar in its general arrangement there to the arrangement that we described in more detail in connection with Glencoe.

Rix, as previously pointed out has a pivoted member colored dark green in these figures, it has a stirrup member at its bottom end close to the pivot point and toward the top of the shank a bolt numbered "e" in these drawings, and passes through a hole in the shank and a hole in the pivoted member.

Glencoe we have just discussed, and it also has a pivoted member with a loop or stirrup at its left-hand end as we see it in Fig. 2 here, and a bolt passing through the shank toward the right-hand end of the shank and through the fixed member so that in both of these last two situations—in fact, in the last three that I have discussed—we have the arrangement of a pivoted member with a stirrup on it, such a stirrup plus an additional bolt holds the shank connected to or attached to the pivoted member.

Q. Then briefly Traeger and Petersen, please. A. Traeger, as shown in Fig. 3 on this chart, has a rivet passing through the hinged member colored dark green, [521] and the shank member colored pink to hold the two together, and up in Petersen, as previously pointed out, there is a stirrup attached to the hinged member, the shank passes through that and then is held in position by means of the bolt 6 operating in the nature of a set screw, and in the nature of the set screw that we saw in one of the Jeoffroy structures a few moments ago.

The Court: Is there a bolt on the Traeger device?

Mr. Morris: A rivet, Your Honor, rather than a bolt, I believe.

A. It is the light green 6.

The Court: The light green projection there?

A. Yes, it is 6. The number only runs to it in its tilted position, but it is the member colored light green and is in the nature of a rivet fastening the two together.

Q. In the group which you have set out on that chart and just discussed, Mr. Fishleigh, are the fastening means or the connecting means which connect the shank and the pivoted member together so arranged that in the pivotal function or pivotal operation of the device the shank and the riveted member operate together about a single pivot pin or pivot point? [522] A. Yes, that is the intention, that they so operate as long as they stay in their proper position.

Q. As long as they stay fastened together? A. That is correct.

Q. Now then, I would like to consider one other aspect of the prior art structure very briefly, Mr. Fishleigh, before turning to 798 specifically. Do you find in the prior art patents and use devices which preceded 798 examples in which the shank attaching member is located in a position between the shank and the fixed part of the clamp? A. Yes, I do.

Q. Have you prepared a further chart to demonstrate that particular association of the parts in the prior art? A. Yes.

Q. Will you place that on the easel, please.

That chart is marked Defendants' Exhibit 20, is it not? A. That is correct.

Q. Will you very briefly explain those structures from this limited standpoint we have just mentioned. A. Yes. In the Dunbar structure, shown in the upper left, that being the Dunbar patent 211,003, we have colored the fixed member in yellow, the hinged member in dark green, and the shank in pink, in conformity with [523] our general color scheme, and it will be noted at a glance that the hinged member, dark green, is between the pink shank member and the yellow fixed member, which provides the pivot "d" about which the shank and the hinged member pivot.

Likewise in Petersen 57,391 Danish patent, the hinge member 2, which pivots about the pivot point 16, is located between the shank 1 and the fixed member, yellow, and particularly between the vertical surface of the vertical flange portion and also between the stop—between the shank and the stop portion 18.

Q. Of course in that structure, as you have already explained, it is quite evident that the fixed part of the clamp has—in that instance would be rearwardly extending flanges, which go down alongside the hinge member. Is that not true? A. Oh, certainly. Then in Cobb we have what corresponds to the fixed member in the bail "a" and that is colored yellow, and is fastened to the frame member "B". Then we have the dark green hinged member and the standard or shank of the tool "P" and the hinged member is between the upper part of the shank and the bail "a", for the most part, although with this particular arrangement the pivot pin portion of the [524] member "a" does pass through between the hinged member and the shank, and also it should be pointed out that in this instance the shank itself comes up and stops against the beam member or frame member "B", that portion colored violet up here for Cobb in Defendants' Exhibit 11.

Carter, as indicated by the drawings, the green hinged member is between the shank and the fixed member so there is no contact or rubbing contact of the shank and the fixed member.

Then down in Rix, as shown in Figs. 1 and 2, and particularly as indicated in the dashed line portion of those two figures, which represent the normal or home base position of the device, the green pivoted member is between the pink shank and the fixed member, so that there is no contact as between the shank and the fixed member.

Q. Mr. Fishleigh, which of those prior art patents or structures, if any, were considered by the Patent Office in connection with the 798 application, insofar as the available records indicate? A. Petersen was the only file wrapper reference from that group.

Q. At page 32 of the file wrapper history, which is already in evidence, I would like to point out some particular [525] language used by Graham's counsel, and ask you a question or so about it.

On page 32 there is some discussion about the old Graham 811 type and then I find this language, "It was pointed out that the present construction"—which of course would be the 798 construction—

The Court: What page are you reading from?

Mr. Morris: Page 32 of the file wrapper, down about a little more than halfway through the second paragraph on the page.

The language is this: "It was pointed out that the present construction avoided this wear by inserting the movable part between the plowing shank and the fixed part and by locating the pivot to avoid rubbing contact of the pivoted part with the fixed part of the clamp. With this arrangement the vibratory movement of the shank acted on the pivoted part or shank attaching member of the clamp. This shifting of the wear point to the pivoted part facilitates repair and replacement when wear does occur."

Now, is there any other example of the prior art, either of patents or prior use structures, which you have not included on Defendants' Exhibit 20, which would accomplish that same result as outlined by the [526] remarks I have just read, even though it might not be strictly—even though the shank attaching member might not be strictly located between the fixed member and the shank? A. Yes, there is one of the other prior use structures which accomplishes that result.

Q. Which one is that, please? A. That is the Glencoe structure.

Q. And would you point out just very briefly how that wear resisting or eliminating function or result would be achieved in the Glencoe structure. A. In the Glencoe structure, as shown particularly well on Fig. 2 of Defendants' Exhibit 17, there is no contact as between the shank 19 and the fixed part at all during the pivotal motion or rocking about the pivot 8, which might take place as the plow was in operation. Likewise, the arrangement is such that even though the hinged member is below the shank in this case, because of the arrangement of the lug 36 and the corresponding lug on the fixed member, that the contact between those two is practically a straight face-to-face contact without any rubbing as between them, so that the contact which does occur between the fixed member and the hinged member is not such as would result in the rubbing contact and rubbing wear that existed [527] between the shank and the fixed member in the 811 where there was not only a pivotal action but a longitudinal rubbing action as well, that is, a longitudinal rubbing action under load, and the extreme loads, and that was the type of wear that was being discussed at this point, I believe, in the file wrapper.

Q. All right, thank you, sir. Now then, I would like to turn our attention specifically to the mechanical elements of the 798 structure as disclosed and set out in the claims of that patent. Have you prepared charts of those claims reflecting the mechanical elements as shown in the drawings of the 798 patent? A. Yes, I have.

Q. All right. Will you place first on the easel such chart as to Claim 1 of the patent. That chart is numbered as Defendants' Exhibit 22, is it not? A. Yes, sir.

Q. Now then, will you use the chart and wherever necessary, Mr. Fishleigh, any device or other drawings necessary, and explain the mechanical elements as defined in Claim 1 as they appear in and refer to the disclosure of the patent. A. I should perhaps first say that at the right end of the chart I have taken Claim 1 and broken it down into the [528] mechanical elements as I understand them of this structure. Then at the left of the claim block in the little encircled notes I have indicated what my understanding is of the structure shown in the drawings and described in the specification of the Graham 798 patent, which provides a response or a basis for those mechanical elements as set forth in the claim. That designation is by way of names, numbers and colors. Then by lead lines I have run out to the various parts referred to in the notes to indicate the structure which provides a response, and on the flap I have reproduced Figs. 1, 2 and 6, and then for additional clarity I have included on the main chart underneath the flap Figs. 3, 7 and 5, so that between the two I believe that is quite clear.

The introduction to Claim 1—and do you wish me to go through the detail of that, of what that is, or may I go directly to—

Q. I think that is already entirely evident in the record and I think we can save some time, just go ahead to the mechanical elements. A. The introduction finds its response in the plow having a frame 1 and other parts 5, 6 and 7, all of which are colored violet, and the ground working tool 3, that tool being uncolored but provided with [529] a shank 2, also parts of which being numbered 8, 9 and 10, and colored pink.

The first element refers generally to the mounting 4 as shown in all these various figures but numbered particularly in Fig. 1.

The second element, the fixed member, finds its response in the fixed part 11, which we have colored yellow, having an underface 60 colored red, and that underface does extend from a point just to the left of the transverse frame member as shown in Fig. 2 to the right-hand end of the fixed member, as indicated by the coloring, and it also has the ears 26 and 27 colored yellow, 27 being shown here in Fig. 2, but for that particular item they are shown probably better in Fig. 7 on the main part of the chart underneath the flap where both 26 and 27 are shown as part of the yellow member.

Element 3, a shank attaching member. That refers to the movable part 12 colored green, which has a plate portion 51, that plate portion being shown particularly in the exploded view, Fig. 7, and is provided with an upper face 59, also shown in Fig. 7, which we have colored red, and an underface engaging the upper face of the shank. That underface is not shown particularly but it is the face underneath this [530] plate portion 51 which, when assembled, would contact the upper face of the shank portion.

Now "means connecting the elongated plate portion with the shank for maintaining the upper face of the shank in constant continuous contact with the underface of said plate portion of the shank attaching member."

I have said in order to find a response to that element it is necessary that two things be considered. First, the bolt 56, colored light green, which passes through the shank and the pivoted member at the right-hand end of Fig. 2, but in addition to that the depending loop 57, shown in Fig. 2 but numbered in Fig. 6 on the flap, both of those are necessary in this structure to provide for the functioning suggested here, that is, maintaining the upper face of the shank in constant continuous contact with the underface of the plate portion of the shank attaching member.

Q. Mr. Fishleigh, that particular element of this claim, that is, element 4, is defined solely in terms of the functions performed, is it not? A. That is correct.

Q. And would it be your opinion that in order to find a proper response for that mechanical element that the [531] mechanical element would have to perform the functions called for? A. Well, yes, or said another way, since this is what is called a means clause, which sometime ago would have been invalid on its face, is now salvaged by statute to say that it may find a response in the structure shown in the patent and mechanical equivalents thereof.

The fifth element, a transverse pin, that finds its response in the transverse pin 48, colored light blue, which pivotally connects the movable part 12 to the fixed part 11.

The sixth element, a coil spring, that refers to and finds its response in the coil spring 65, colored orange.

The last element, again a means clause, having connection with the forward end of the shank, and so forth, that finds a response in the rod 63, 64, 66, 67, those parts which are colored brown in these drawings.

Q. Mr. Fishleigh, I would like, before we leave this Claim 1 and turn to Claim 2, I would like to consider some specific language of elements 2 and 3, the fixed member and the shank attaching member. We have discussed many, many times here during the past few days, of course, some of the specific language I have in mind, [532] and that is the language of the fixed member which specifies a longitudinally extending underface. Then the corresponding language of element 3, or the shank attaching member, specifies an upper face, corresponding with and normally in contact with the underface of the fixed member.

Now then, looking at the specifications of the patent and considering only that language or those features, I wonder if you would refer to column 3, lines 63 through 67, and read that language, please. A. "The plow shank and movable part 12 of the mounting are resiliently retained in normal position with the upper face 59 of the plate portion 51 in clamping engagement with the underface 60 of the fixed part 11."

Q. All right. Now then, turn to column 4, lines 10 through 19, and read that, please. A. "This rocking movement of the shank will cause the movable part 12 to pivot away from the fixed part 11 along with the forward end portion 8 of the shank 2 to effect compression of the spring 65 so that the stored up action in the spring will return the shank and movable part of the clamp to normal position with the plate portion 51 resiliently clamped against the fixed part 12 of the mounting, as shown in Fig. 2."

Q. All right.

[533] Mr. Scofield: That is part 11, isn't it, instead of 12?

A. Well, it is fixed part 11. If I read 12 I misspoke.

Q. (By Mr. Morris) One other reference in the specifications, column 4, lines 46 through 53. Will you read that, please. A. "The spring seat 66 is then applied over the upper threaded end of the rod to engage the upper end of the spring, after which the nut 67 is applied to compress the spring and draw the movable part 12 into clamping engagement with the fixed part 11, sufficient tension having been applied to normally retain the shank and tool in plowing position."

Q. Now then, have you studied the specifications of the patent and can you tell us whether or not those are the three references, the three places in the specifications where there is some discussion of the positioning of the shank and the hinge member relative to the fixed member in this device? A. In the specification proper I believe those three are the only references to this engaging operation.

Q. And of the three references which we have just noted it is of course quite apparent that the first one is the only one that mentions the faces of the fixed member and the shank attaching member as such, is it not? [534] A. That is correct.

Q. Now, have you studied the original claims as contained in this application, the 798 application? A. Yes, I have.

Q. At the outset there were 12 claims contained in the application, were there not? A. That is right.

Q. Have you studied those 12 claims to determine whether or not any of the 12 contains a specification of a longitudinally extending underface of the fixed member and a corresponding and normally contacting upper face of the pivoted member? A. I have studied those 12 claims with a view to determining that.

Q. And what is the fact as to the content of those 12 claims on that specification or those two specifications? A. There is no reference to either of those points in the first 12 claims. In fact, generally speaking, the fixed part is merely referred to as a part adapted to be fixed to the frame. In some instances, some additional limitations are added but in no place is there a reference to the lower longitudinal face of the fixed part and its contacting relationship with a similar upper face on the hinged member.

Q. When, from your study of the file wrapper history, did [535] the specification of the longitudinally extending face of the fixed member and the corresponding upper face of the pivoted member come into the claims? A. Those two limitations came in on pages 29 and 30 of the file wrapper. In point of time they came in after the first 12 claims had been rejected, after a pair of oral interviews with the examiner and in the same amendment which started out by cancelling the preceding 12 claims.

Q. Now, of course the Claims 13 and 14, which were added by that amendment, ultimately issued as Claims 1 and 2 of the patent with some very minor wording changes, did they not? A. That is correct.

Q. Was there any change in the wording of the final claims as issued in the respect which we are discussing right now, that is, "the longitudinally extending underface in engagement with a corresponding upper face of the shank whereby the plate portion of the shank attaching member is between the shank and the fixed member"? A. No, there was not.

Q. Now, in the remarks contained in the file wrapper history, following the interview with the examiner and following the substitution of the two new claims [536] for the 12 which had originally been in the application, do you find any language in those remarks which indicates the importance or the purpose of those corresponding contacting faces of the fixed member and the pivoted member? A. Yes, there is some very specific and definite language about that.

Q. I would like for you then to consider and point out to the Court some of that language which you consider to be pertinent. I would like to first ask you to direct your attention to page 33 of the file wrapper history, the third paragraph on that page, commencing with the word "However," which is the beginning of the second sentence in that paragraph, and read such portion of it as you consider pertinent to the particular inquiry right here. A. "However, the examiner believed that the Danish patent to Petersen disclosed the idea of mounting the pivoted part of a clamp between the shank and the fixed part. It was then pointed out that the pivot and inter-contacting parts have a different relationship than the pivot and contacting faces of applicant's present clamp. The mounting of the Danish patent, as well as the contact points between the fixed and pivoted parts, have a different relationship with respect to the plow [537] frame and to the portion of the plow shanks."

Q. All right. Then turn your attention over to page 34 and down in the second paragraph, about the middle of the paragraph, the part beginning, "Applicant's mounting has no beak," and if there is any portion there which you consider as shedding any light on the question will you read it, please. A. Yes. We might start right there—

Q. If you want to back up and pick up any context that should be considered, do so. A. Well, we could start at the beginning of the paragraph. "This is confirmed by the translation which states, 'Part 2, which rotates on a bolt 16 passed through the lateral cheeks 8, has a beak 17 at the front'." And parenthetically I should say here, of course. that this portion of the file wrapper discussing the Petersen patent, the Danish patent, which we have previously considered, and the part referred to as a beak 17 is that portion of the green member on our drawings which contacts with a portion of the fixed member to act as a stop.

Continuing: " 'which by engaging on the part 18 of the front wall carried back of the machine frame 3 stops the movement of the part 2, when the latter is pressed back by the spring 9.' Applicant's [538] mounting has no beak. The contacting faces of applicant's device extend substantially the full length of the mounting, and no one portion of one face contacts the other face before other portions come into contact. Consequently the stop faces are not even equivalent to a beak."

Q. Then I would like for you to direct your attention to page 35, the first sentence in the last paragraph ending on that page, and read that, please. A. "The present claims, which are two in number, have been substituted for the original claims to better bring out the present invention and distinguish from any hypothetical structure resulting from modification of applicant's patented structure as taught by the Danish patent to Petersen."

Q. Then turn to page 36, the paragraph beginning, "Claim 13 distinguishes" and read such part of that as you think may be pertinent on the inquiry. A. First I should say that Claim 13 of the application referred to in this paragraph is the one which eventuated as Claim 1 of the patent in suit. Quoting, "Claim 13 distinguishes from the references by defining a fixed member having a longitudinally extending underface terminating forwardly of the transverse member to which the mounting is adapted to be fixed and a shank [539] attaching member having an elongated plate portion provided with an upper face corresponding with and normally in contact with said underface of the fixed member and provided with a longitudinally extending underface in engagement with the corresponding upper face of the shank."

Q. Now then, down in the next paragraph, just about the end of the paragraph, I believe there may be another reference to contacting faces, but I wish you would read the whole paragraph for the record, please. A. "The claim further distinguishes from the hypothetical structure by specifying a transverse pin pivotally connecting the shank attaching member to the fixed member at the rear ends of said normally contacting faces."

Q. From the file wrapper history here, Mr. Fishleigh, do you feel that the language as to contacting faces of the fixed member and of the pivoted member are matters of some significance to the mechanical elements of this structure as set out in these claims? A. I do, very definitely, sir.

Q. Now then, just one other item of Claim 1 I would like to consider before passing to 2. Element 4, the means for connecting the shank to the shank attaching member, which you have already discussed and pointed out, I [540] wish you would consider the specifications of the patent and point out to the Court the particular language of the specifications which cover those specific structural or mechanical elements. Refer to column 3, lines 50 through 62 of the patent, please. A. "The movable part also includes a depending loop 57 having a rectangular passageway 58 substantially conforming to the cross sectional shape of the end portion of the shank whereby the end portion 8 of the shank is passed therethrough and embraced by the loop portion to rock with the movable part of the pivot pin 48. The nut 56 of the bolt may be set up snug but is left sufficiently loose to permit slight longitudinal movement of the end portion of the shank relatively to the pivotal part of the clamp. The nut '56' is backed by a jam nut '56' to prevent turning thereof after the nut '56' has been set."

Q. Are those the specifications which define the means for connecting the shank to the shank attaching member in the 798 structure? A. They are.

Q. Turn, please, to Claim 2 of the patent, and have you prepared a further claim chart for that claim? A. Yes, I have a similar chart, which has been marked for identification as Defendants' Exhibit 23 and which does [541] treat the mechanical elements of Claim 2 in a way similar to that in which the preceding chart treated the mechanical elements of Claim 1.

Q. All the way through element 1 and the first portion—well, even all of element 2, I believe the language of the two claims is precisely the same, is it not? A. I believe it is. I think it is word for word the same.

Q. No further explanations then appear to be necessary.

Turn your attention to element 3, as set out in Claim 2, and explain from there on, please, paying particular attention to where there is something different from what there was in Claim 1. A. Well, that portion of element 3 down to "shank attaching member" is also the same either word for word or generally the same as in the preceding one. Then "said shank attaching member having a lug extending upwardly between the said ears of the fixed member," and so forth. And then, "said shank attaching member having depending means embracing the shank at the rear end of said plate portion."

That finds its response in that portion in the upwardly extending ear 52 colored dark green, that being the portion shown over here in Fig. 7 and marked as 52. It is that portion of the shank attaching member or pivoted member into which the hole is placed [542] for cooperation with the pivot pin 48. That same ear is shown in Fig. 2, but doesn't carry the 52 number.

Then in addition to that the depending loop 57, shown in Fig. 2, also shown in Fig. 6 and numbered 57, and also shown over here in the exploded view, Fig. 7. That is the depending loop through which the shank is passed and which, as the next item says, cooperates to hold the shank in position.

Then the next item, "a bolt connecting the forward end of the plate portion with the forward end of the shank and cooperating with the shank embracing means in maintaining the upper face of the shank in constant continuous contact with the underface of said plate portion."

Now, that last is substantially the same language as occurred in the latter part of element 4 in Claim 1, and here specifically spells out that it is not the bolt alone but the bolt cooperating with the shank embracing means, that is, this depending stirrup means 57, which does maintain the upper face of the shank in constant continuous contact with the underface of the plate portion. As to this element it refers only to the bolt means but that bolt means cooperates with the element 57, that is, the stirrup means. Then the pivot pin is substantially the same, a transverse pin 48 and [543] coil spring 65, and the response for element 7 again the rod 63, 64, 66 and 67, that is, the rod and its associated mechanism, that is, the washer and the nut. But I point out here that the function of those parts, as set forth here and as was set forth previously, in the last element "whereby the spring yieldably maintains said normal contact of the upper face of the plate portion of the shank attaching member with the underface of the fixed member." In other words, the functioning of that is specifically spelled out in these last elements, and that also was the part of the material which I believe was added in these two new Claims 13 and 14.

Q. One minor point in element 5, as set out in Claim 2, do you find any specific language which more precisely locates the position of the pivot pin than is in the similar element of Claim 1? A. Yes. It refers to the pivot pin being above the plane of the underface of the fixed member.

Q. Does that complete your discussion of the two claims as they apply to the structure as shown in the 798 patent disclosure? A. Well, yes, unless you have some further question about it.

* * *

[544] Q. (By Mr. Morris) Mr. Fishleigh, we have now reviewed the prior art, at least portions of the prior art which have been cited in defendants' answer and that which has been cited in the file wrapper history of this patent; also considered the mechanical elements as they are set out in the claims of the patent.

I would now like to turn our attention to a somewhat different subject approaching those subject matters.

What experience have you had with mechanics and designers and engineers? A. Well, starting back in 1919, I was for quite some stretch a mechanic in overalls, and since that time I have had almost constant cooperation with mechanics, designers and engineers and others.

Q. Have you had any particular assignment or work which gave you special association with younger engineers and gave you an opportunity to observe the normal capacities of those people? A. Yes. For a number of years prior to my moving back from Detroit to Chicago in 1951, I served on a committee [545] of the Michigan Society of Professional Engineers, which cooperated with the State Board of Registration and our cooperation consisted in working out examination questions and correcting the blue books of those who took the examination for registration as professional engineer. Now, those were young fellows who not only had an engineering degree from some recognized college, but also had at least five years of practical experience.

My work in that connection gave me a rather definite insight into the types of problems that they were expected to tackle, and the sorts of results that they came up with.

Q. From your experience in those fields, working with and observing the work of mechanics, designers and engineers, do you feel that you are qualified to appraise the work of those people and to judge or form an opinion as to what might reasonably be expected of them in their normal capacities, expected skills, and so on? A. Well, I believe I am so qualified. I have occasion to do it very frequently.

Q. Then based upon that experience and qualification, considering both your personal experience and your observation of the mechanics and engineers whom you have just mentioned, I want to ask your opinion about a phase of this matter that I think is quite important [546] on the issue of—it goes to the issue of invention in the case. I would like for you to assume with me some specific things for purposes of answering some hypothetical questions. I want you to assume that a mechanic or designer or engineer, skilled in the agricultural implement art, had before him the Jeoffroy SC-580 spring clamp structure, which you have just explained this morning. Assume further that he had acquainted himself with the prior patents and devices which are represented on the charts, the prior art charts, Defendants' Exhibits 11, 19 and 20, which you also explained this morning.

Now, with those assumptions I want to know whether in your opinion it would have been within the expected skill of a designer or mechanic or young engineer, skilled in that art, to have used a mounting such as the Jeoffroy SC-580 mounting, and to have fastened the shank of the ground working tool in the structure with the pivoted shank attaching member positioned between the fixed member and the shank and with the pivoted shank attaching member and the shank fastened together in the manner disclosed in the Rix patent?

Mr. Fishburn: If Your Honor please, we object to that, first, as based on assumptions, and more [547] important is that it is the very thing that this Court has to determine and it is not for this witness to determine that in this case, the same point that I brought up before. Whether or not this man has worked with young people and knows what they can do, I heard that same story 11 years ago, didn't impress me too much, when he testified against the 811 patent. I think it is entirely outside of the province of this witness to testify along those lines. That is entirely the function of this Court.

* * *

[554] Mr. Fishburn: As I understand his question, he went into the witness's background about working with young people, what young engineers could do, and I think that basing his question on what some other designer or anyone else would do, having this art before them, is improper absolutely. This witness can give what he could do, as far as I am concerned.

The Court: I think maybe so, I think that gets sort of speculative and conjectural as to what other people can do.

Mr. Fishburn: If he wants to give his opinion with all this art before him, could he have worked out this invention, that is a different matter, but whether [555] or not anyone skilled in the art could do it, that is getting clear out of his province.

The Court: I think that is getting pretty speculative, anyone skilled in the art. I don't see where it has much probative value in that broad form, anyone skilled in the art. The Court wouldn't know who it was or how skilled they were.

Mr. Morris: It is not directed to anyone, Your Honor, it is directed to a mechanic or designer operating in this field, that is, the field of agricultural implements, and it is based upon observation and relationship with those people, that class of people.

Mr. Fishburn: It is further speculative, Your Honor, whether or not he saw these other men working in this field. It seems to me so speculative that it is clear out of line of proper evidence, and that is the thing you have to determine.

Mr. Morris: As the Supreme Court said, I don't know how the trier of facts can be expected to work in a vacuum, if the test is what could be expected of those ordinarily skilled in the art, how the Court can formulate or how any court can formulate an opinion as to what would be expected of those skilled in the art without some indication or evidence as to what the capacities of those people might be, [556] what could be or would be expected of them, those capacities and expectations being given by people who do know.

The Court: It appears to me that it would be quite speculative, in the form in which you have asked the question. It is different than other hypothetical questions, addressed to a witness's own expert knowledge in a particular field about which he is testifying. I think he could give his opinion as an expert as to whether he could have conceived this from the prior art.

* * *

[558] Q. (By Mr. Morris) Then I will rephrase the question, Mr. Fishleigh. In your own opinion, with the samples of the prior art before you which I have already directed your attention to, that is, Jeoffroy SC-580 and those prior art matters disclosed on the charts, would it have been quite feasible, quite evident, that you could take the Jeoffroy type spring clamp structure and attach the shank to a hinge member with the hinge member or pivoted member situated between the fixed part and the shank and fastened to the shank substantially in the same fashion as disclosed in the Rix patent? A. I believe it would be a very obvious, very normal, common sense, natural thing to have done.

Q. Have you prepared a chart to demonstrate the combination of those two structures into a composite, workable structure? A. Yes.

Q. Would you place that chart on the easel and identify it, please. [559] A. That chart has been marked for identification as Defendants' Exhibit 24.

Q. All right. Will you please proceed to explain how the two prior references could have been combined in the manner you have suggested? A. Yes. By way of brief explanation of the organization of the chart, in the upper left I have photostatically reproduced the figures of the SC-580 structure which previously appeared on one of the colored enlargements here this morning, and underneath that I have set forth a description of that Jeoffroy structure on a flap and main chart underneath it, and that description has been couched, insofar as is applicable, in the language of the mechanical elements of Claim I and/or Claim 2 of the 798 patent, so as to indicate the points of similarity between this structure and the 798.

Also in the upper right-hand corner I have photostatically reproduced certain of the figures of the Rix patent and have set forth a description of that structure, again phrasing the description in accordance with the language of the mechanical elements of the claims here in suit insofar as that language was pertinent.

In the center in the note I have indicated what one would do to develop the structure we have just [560] discussed, and I have said, "Use the Jeoffroy mounting M including the fixed member 3, shank attaching member 8, pivot pin 7, coil springs 12 and rod means 9, 10. Move the ears 26, 27 of the fixed member rearwardly and upwardly.

"If desired, place the shank 2 below the shank attaching member 8, bolt them together and use a depending loop v, all as disclosed in the Rix patent 287,965."

Now backing up a little bit, and looking at the description of the Jeoffroy structure, we have a mounting which we have marked M "for pivotally attaching and supporting the shank 2, (colored pink) of the ground working tool to a transverse working member 1, (colored violet), of the frame, the mounting including a fixed member 3 (colored yellow) adapted to be fixed to the transverse member of the frame and having a longitudinally extending underface 15 (colored red) terminating forwardly of the transverse member to which said mounting is adapted to be fixed, and having ears 26, 27 extending rearwardly from said underface at the sides thereof." And I should point out that in this case they do extend rearwardly and downwardly.

"A shank attaching member 8 (colored green), having an elongated plate portion 51 provided with an [561] upper face 59, said shank attaching member having a lug 52," and that is shown here in Fig. 2, "extending downwardly between said ears of the fixed member and disclosed at the rear end of the plate portion.

"A pivot pin 7 (colored light blue) extending transversely through said lug 52 and pivotally the connecting shank attaching member to the fixed member and carried by the ears 26, 27. Coil springs 12 (colored orange) having one end seated on the forward end of the fixed member, and means 9, 10, (colored brown) having connection with the forward end of the shank attaching member, and with the other end of the coil spring whereby the spring yieldably maintains normal contact of the upper face of the shank member with the underface of the fixed member to maintain the normal plowing depth of the ground working tool."

From that description it will be evident that that description follows closely much of the language of the mechanical elements of the claims, but differs therefrom in certain details.

Now, as to Rix, we have "a mounting M for pivotally attaching and supporting the shank D (colored pink) of the ground working tool to a transverse member B (colored violet) of the frame, the mounting including a fixed member (colored yellow) adapted to be [562] fixed to the transverse member of the frame," and that is the portion to which I am now pointing and also includes a fixed member up above. "and having ears"—and that fixed member does have ears extending out, marked—I believe it is "t". Anyway, the ears which provide the hole through which the pivot then fastens. Then "a shank attaching member (small) c (colored green) having an elongated plate portion provided with an inner face and a vertically extending outer face."

In other words, as we see it in Fig. 2, that shank attaching member, and in Fig. 3 too, does have an elongated plate portion, it has a vertically—or it has an inner face and a substantially vertically extending outer face. "the outer face in engagement with a corresponding inner face of the shank whereby the plate portion of the shank attaching member is between the shank and the fixed member."

In other words, this plate portion is between the fixed member and the shank and between the shank and the frame member.

"Said shank attaching member having lugs 'tt' (colored dark green)," and those are the lugs which are evident in Figs. 3 and 4, "extending inwardly between said ears of the fixed member and disposed at the [563] lower end of the plate portion, said shank attaching member having outwardly extending means v (colored light green) embracing the shank D at the lower end of the plate portion." And that is the stirrup nub v, colored light green. through which the upper end of the shank member passes.

Q. Is there a further element there that you want to mention? A. Yes, bolt "e", that is the small bolt, colored light green, connecting the plate portion with the upper end of the shank and cooperating with the shank embracing means in maintaining the inner face of the shank in constant continuous contact with the outer face of said plate portion. And a pivot pin "n" and a coil spring.

Now coming down, after having indicated these rather simple additions or changes that would be necessary in the Jeoffroy mounting, I have said "thus producing the Graham structure consisting of the mechanical elements defined in the claims of the patent in suit," of the 798 patent, and I have redrawn the structure of Jeoffroy SC-580 making the changes suggested in the note in the center and producing a structure such as shown in the lower right-hand corner of the chart.

Q. Before turning to a consideration of the mechanical [564] elements of the claim, as applied to this composite structure, Mr. Fishleigh, what are the total changes, mechanical changes necessary there to adapt a shank attaching member such as in Rix into a spring clamp structure such as Jeoffroy? What are the total mechanical changes or engineering or manufacturing problems that you would have to do that? A. Well, the first thing is to attach the shank to the pivoted member.

Q. Is that fully disclosed in Rix? A. Yes, in the same type of fastening means used in the 798 patent, namely, a stirrup and a bolt.

Q. What other changes would be necessary? A. Well, the second thing—well, in connection with that I have said use a depending loop. In addition to that, to turn the plate—the shank attaching member over so as to put the pivot above instead of below the shank, and that would require a mechanical change in the fixed member with the ears—run them up and back instead of down and back.

Q. I notice that in the composite structure you have retained the "T" headed shape of the hinge member as it actually exists in the Jeoffroy structure? A. Yes.

Q. Would it have been equally feasible to take the single [565] elongated plate portion from Rix and orient it into the Jeoffroy SC-580 structure and use a single spring and rod rather than the Jeoffroy two springs and rods? A. Yes. And in that case, following along the lines there, the single spring would have run through with this orientation through both the shank and the hinge member, or even in this structure it would also have been simple to have used a U-bolt instead of two separate bolts, in which case it would have gone down underneath the shank member itself.

Q. That is, if you desired to take the hinge member bodily out of Rix as it is and place it into the Jeoffroy structure, which uses two springs and two spring rods on opposite sides, on each side of the shank rather than passing through the shank, then you say you could have used the common expedient of a U-bolt to pass underneath rather than tying it into the end of the plate itself? A. That is correct.

Mr. Fishburn: If Your Honor please, he is leading the witness. We object to that form of question. I would like for my objection to go to all this type of questions. I can't tell whether he is testifying or whether the witness is testifying.

Mr. Morris: All right, you are right, Mr. [566] Fishburn. I thought I might speed this proceeding up just a bit by moving that way.

Q. (By Mr. Morris) Now, Mr. Fishleigh, have you considered the mechanical elements of the claims of 798 from the standpoint of whether they found final response in the composite of Jeoffroy SC-580 and Rix? A. Yes, I have.

Q. What is your opinion on that? A. I find in that structure there is a response to each of the mechanical elements. In two cases there is a slight difference in detail from the structure originally described by those elements, which would require a moderately broad construction.

Q. On the lower left-hand part of the chart have you set up blocks from the patent and shown on the face of the chart wherein you found a response in the composite structure of Jeoffroy and Rix? A. That is correct.

Q. Now, the two elements that you stated there might be some minor detail that should be brought out, would you do that, please. A. Well, in element 5 it calls for a transverse pin pivotally connecting the shank attaching member to the fixed pivot at the rear ends of said normally contacting faces.

[567] Now since, as shown here in Fig. 2 of the composite structure, there is—while a longitudinally extending face, it is limited in its extent at the right-hand end of the figure, and that pivot point is not precisely at the rear end, it is removed some little distance to the left of it, so that it is to the rear of the said normally contacting faces but perhaps not precisely at the rear end, although in the Graham structure 798 it is not—the pivot point is not precisely at the rear end, it is slightly back, as in this scale of this drawing, and about three-quarters of an inch behind the rear end of those faces, but to that extent there is a slight difference.

Q. All right. And what is the other element in which there is a slight difference or a possible slight difference? A. Well, in the last element the "means having connection with the forward end of the shank." As exactly shown, the means for connecting the spring, the brown rods, are connected directly to the pivoted member and in this particular structure have no direct, only the indirect connection to the shank. If instead we had used U-bolts then it would have connected directly to the shank, but the element simply says "means having connection with the forward end of the shank."

[568] Q. Would that be the same kind of indirect attachment of the means to the shank as in the Deere 100 series wherein the rods connect with the forward end of the hinge member and the shank is then in turn bolted to the hinge member? A. Yes, it is quite that way and would require the same sort of broad construction of the element in order to find a direct response.

Q. Now, in Claim 2 the same minor differences in language would be present as in Claim 1, particularly in element 7, would they not, Mr. Fishleigh? A. That is correct.

Q. Now, I notice in the file history, and of course as you have observed from many instances of studying file histories, the examiner mentions the teaching of the Graham 811 structure in the light of other references. Have you considered here a starting point with Graham 811 and considered some other elements of some other examples of the prior art for considering another way in which a composite structure might be made from the art? A. Yes, I have.

Q. Is there another simple way which you find for combining other segments of the art to produce a quite similar composite structure? [569] A. Yes, there is.

Q. Have you prepared a chart to demonstrate that? A. Yes.

Q. Would you place it on the easel, please.

(Witness complies.)

Q. What pieces of prior art have you used in this composite, Mr. Fishleigh? That is Defendants' Exhibit 25. A. In this instance I have started with the Graham 811 structure and have made certain changes in the light of the teaching of the Petersen patent and the Glencoe prior public use.

Q. All right. Will you go through that chart, please, and explain in the same fashion as you did with the other. A. Yes. Again, I have described the Graham 811 structure in language following the language of the claims—of the elements of claims, wherever that was possible, and we have "a mounting M for pivotally attaching and supporting the shank of the ground working tool to a transverse member of the frame." That refers to the mounting "M" generally, which does pivotally attach and support the shank 34, colored pink, to the transverse member of the frame, colored violet and numbered 3 in these views.

"The mounting including a fixed member 41 (colored yellow)," and that is the member which has a [570] plate portion and then side members extending down to form a channel or way for the other material to be mounted within.

"A fixed member adapted to be fixed to the transverse member of the frame and having a longitudinally extending underface '42' (colored red)." In this instance the longitudinally extending underframe does extend from the left-hand end of the frame member, as shown in this drawing, a considerable distance to the extreme right-hand end of the fixed member, as it is shown in Fig. 4 of the 811 patent on this chart.

That underface "terminating forwardly of the transverse member to which said mounting is adapted to be fixed," and it does extend considerably forward or to the right of the right-hand end of the transverse member. "The fixed member having ears 59, 60, (colored yellow), extending rearwardly from said underface at the sides thereof." Now, these ears do extend rearwardly but in this instance they extend downwardly.

"A shank attaching member 63 (colored green) having an elongated plate portion provided with an upper face 63 and a longitudinally extending underface." That is the hinged member or shank attaching member which has an upper face 63 as indicated—well, I don't just—yes, as indicated [571] here in the left of Fig. 4, and an underface not specifically numbered, perhaps 63, although 63 goes to the entire plate number, but it is the surface to which the lead line from 63 points.

"Shank attaching member having a rib 64." That is the rib which extends down to approximately the center line of the pivot pin, "extending downwardly between said ears of the fixed member and disposed at the rear end of the plate portion and below the plane of the underface of the fixed member." In other words, those do come down here below this underface of the fixed member and at the rear end of the plate portion of that member.

There is also a pivot pin carried by the ears on the fixed member, that pivot pin colored light blue, which pivotally connects the shank attaching member to the fixed member, whereupon the shank attaching member fits upon the rocking movement of the shank.

"A coil spring and means having connection with the forward end of the shank and with the other end of the coil spring." Now, here again that connection with the forward end of the shank is through the hinged member.

Now over in Petersen we have "a mounting M for pivotally attaching and supporting the shank 1 of the [572] ground working tool to a transverse member 3 of the frame." The frame transverse member is the violet member and the yellow here is the fixed member, which as I previously pointed out—that comes up in the next element.

"Fixed member 4 adapted to be fixed to the transverse member of the frame and having ears at the sides thereof." Those are the ears which extend down and are an integral part of the side members of that fixed member. Then "a shank attaching member 2," which is colored dark green, "having an elongated plate portion," that is the part to which I am pointing and to which the lead line 2 runs, "provided with a vertically extending face," and it does have a vertically extending face on the left-hand side of the device, and it is shown in this picture, "in engagement with a corresponding face of the shank whereby the plate portion of the shank attaching member is between the shank and the fixed member, said shank attaching member having a lug extending between the ears of the fixed member," and that is the lug on that shank attaching member through which the pivot pin passes.

Q. Would that be, Mr. Fishleigh—of course it doesn't show in the drawing—would that be behind the yellow portion [573] where the pivot pin is located as it appears in the drawing there? A. That is correct, that portion of it. Now, the shank attaching portion also has "outwardly extending means 5 (colored light green) embracing the shank at the lower end of the said plate portion" at this point (indicating).

Then there are means "cooperating with the shank embracing means in maintaining the face of the shank in constant continuous contact with the face of the plate portion." In other words, this screw 6 holds the shank up into constant contact with the hinged member. Then a pivot pin and a coil spring.

Now coming down to the Glencoe device, "a mounting for pivotally attaching and supporting the shank 19 of the ground working tool to a transverse member C of the frame, the mounting including a fixed member A (colored yellow), adapted to be fixed to the transverse member of the frame and having ears." The ears are not particularly shown in this view, but they do extend down to provide a support for the pivot pin 8.

Q. By reference to Fig. 1 of the Glencoe drawing which appears on the chart 11, it has already been explained, do the ears you just mentioned appear quite clearly? A. Yes. Then "a shank attaching member having an elongated plate portion, said shank attaching member [574] having a lug (colored dark green)," and that is the lug extending downward and between the ears of the fixed member through which the pivot pin 8 passes, "said shank attaching member having upstanding means 29 (colored light green) embracing the shank at the rear of said plate portion", and that is the stirrup-type member that we have previously discussed.

In addition to that "a bolt connecting the plate portion with the forward end of the shank." That is the bolt 32, also colored light green, and then we have a pivot pin, a coil spring and means for connecting the forward end of the shank attaching member with the other end of the coil spring "whereby the spring yieldably maintains contact of the shank attaching member with the fixed member," and of course it will be recalled that that contact is through the lugs 36 and the corresponding depending lug on the fixed member.

Now what we have said there is to "use the Graham 811 mounting M including the fixed member 41, the shank attaching member 63, pivot pin 62, coil spring 66 and rod means 71.

"If desired, mount the shank attaching member 63 between the shank 34 and the fixed member 41, as in the Petersen Danish patent, and attach the shank 34 to the shank attaching member 63 by means of [575] a bolt 32 and a loop 29, as in the Glencoe mounting." And when that is done we would get a device as shown in the drawings at the lower right and that in its features approximates or equals the structure shown in the Graham patent in suit.

Q. Mr. Fishleigh, I note that in the final composite picture or drawing on the lower right-hand side of the chart that the pivoted shank attaching member does not come out in precisely the same form as it appears in either 811, Petersen, or Glencoe. A. You mean at the left end?

Q. Yes, at the left end primarily, of course, particularly in its arrangement with the pivot pin and the stirrup, and what is the reason for that? A. Well, that structure was turned over from the 811 patent and the ears or the lug on it moved upwardly and backwardly a little bit to clear the frame member and then the stirrup member put down from it. At the other end it had to be turned over, of course, to provide for movement of the rod in the same manner as in the 811 patent, but with the flare of the opening in the other direction, and we filled in the space between the side flanges of the 811 structure.

Q. In the field of mechanics state whether or not it is a rather common practice to adapt a part from one device [576] and incorporate it into another device? A. Well, yes. A great deal of my work in so-called production engineering during the—well, the 30's and 40's—dealt with taking mere diagrammatic showings of structures, sometimes that had been patented and sometimes not, and adapting satisfactory mechanisms to make them operate in the intended fashion.

Q. And in adapting one part from one mechanism to make it work upon another mechanism, state whether or not it is frequently necessary to make some minor modifications of form in order to fit the two together? A. Oh, yes.

Q. Do those modifications in form materially affect the actual operation of the part itself? A. No. They fit into the environment sometimes, sometimes changes in form for clearance and other times, as in this case, in part to provide for operating contact with other parts.

Q. And then have you studied the mechanical elements of the claims, or as specified in the two claims, to determine whether or not they find a response in the composite structure of 811, Petersen, and Glencoe? A. They do, as indicated by the notes alongside of the two claim boxes and the flap on the main chart.

Q. Is there any special point that needs any particular [577] clarification in connection with those? A. I don't believe in this instance, no, sir.

Q. Now then, Mr. Fishleigh, you have not prepared any further charts to demonstrate how the prior art might be combined to produce a structure quite similar to that of the patent in suit, but I wonder, without the assistance of charts, what might be done in the way of combining the Rix patent with the Graham 811 structure, rather than combining it with Jeoffroy SC-580 as we have demonstrated on the preceding chart? A. Well, the same approach would end up with substantially the same result because of the similarity between the Graham 811 and the SC-580 and at least those mechanical elements which we are concerned with here.

Q. Mr. Fishleigh, now that we have given a rather full consideration to the prior art and to the 798 structure, I wonder if these conbinations, these suggestions of fastening the shank and the hinge member together first occurred to you after you had full knowledge of the 798 structures. Did they occur to you—

Mr. Fishburn: If Your Honor please, I think that is entirely leading and surely not permissible in a case of this kind.

The Court: I believe it is leading.

Q. (By Mr. Morris) All right. Mr. Fishleigh, state whether [578] or not you ever gave any consideration to the fastening of the shank of a plow of this sort to the hinge member of a plow of this sort before you ever saw the 798 patent or saw any disclosure of the 798 patent? A. Yes, I did.

Q. When did that first occur, please? A. Well, that first occurred to me back just a little more than 11 years ago in the course of the testimony in the first Graham-Jeoffroy trial at a time when Mr. Graham was testifying as to the deleterious effects of fixedly attaching the shank to the hinged member, and to mounting the pivot member above the plane of the stop member or the shank attaching member, and at that time we considered the general proposition and, without even the benefit of any prior art, suggested as a very logical and proper design that it would be far better, instead of having the wear producing floating type of arrangment of the 811 patent, and the same thing is carried over into the SC-580, in part, if we had in the first place fixed pivots for the hinged member instead of the loose pivotal arrangement resulting from just the slot in the hinged member fitting over a pivot pin, if we made that—

Q. Do you recall—excuse me. Go ahead. [579] A. And if we fastened the shank to the hinged member instead of letting it ride freely and in a manner which put the entire load of the plow upon the spring bolt which, as I indicated then, I felt was a very undesirable design.

Q. During the course of that trial in April, 1951, which of course was even prior to the filing date of the application of the 798 patent, do you recall whether an actual courtroom demonstration was conducted, in which you demonstrated the closing of the pivot at the rear of the Graham 811 hinge member and demonstrated the fastening of the shank fixedly to the hinge member by means of some fastening screws? A. Yes. Such modification of one of the structures was made and demonstrated in court.

* * *

Q. (By Mr. Morris) Now, Mr. Fishleigh, giving consideration to the mechanical elements of 798 again, do you find in the 798 structure any new mechanical element that is not disclosed in the prior art which we have considered here? A. No, I find no new elements.

Q. Do you find any evidence of a new result that would be achieved by the 798 structure as compared to the structures of the prior art? A. No, I find nothing new in the particular functioning.

Q. From your observation of the plowing work done by these various types of tools in the field, is there anything to indicate that the structure of 798 would do any different plowing job than the others that have been given consideration? A. Well, of course I have never seen a 798 structure operate, but based on what other structures I have seen operate and analyzing what would be expected of that structure, I would say that they would operate in the same functional manner.

Q. In the unification of elements as contained in 798 [581] structure, as set out in the patent, do you find any new function for any of the individual elements performed in that unification that is different from what functions are performed by those elements in the prior art structure? A. No.

Q. Do you find, Mr. Fishleigh, anything at all surprising or unexpected insofar as the over-all performance or the performance of the individual elements in the unification of elements as found in 798? A. No. I have studied that rather carefully and I find nothing that would be unexpected or surprising.

* * *

Q. (By Mr. Morris) So the old mechanical elements, as selected and unified here in 798, function and do the work just as you would expect them to do from your [582] study of the elements in the art? A. Yes. In fact, they function in the way that I would have expected them to do when I first made the suggestion on this general type of organization in 1951.

Q. Mr. Fishleigh, it was pointed out in the file wrapper history here, and there is some testimony in the record at this point, that the Graham 811 type structure had some detrimental wear factors, and in the file wrapper it is pointed out that the 798 structure eliminates some of those detrimental wear factors and thereby achieves a more economical result. While that might be quite true as compared to over the 811 type clamp with its sliding wear producing pivot, do you find from this unification in 798 any increased efficiency or cheapness or superiority of performance as compared to the Glencoe prior art clamp. A. No.

Q. At the risk of just a bit of repetition and tedium, in the prior art structures such as 811 and Jeoffroy SC-580 and Glencoe, is there a stop function performed, that is, a function to position the shank in its normal operating position? A. Yes, sir.

Q. And in those structures does the fixed part of the clamp perform a part of that stopping function? [583] A. Yes, the fixed part furnishes one side of the stop means.

Q. In some of the references other than those we have just mentioned is the stop function performed by some other part of the plow or mechanism? A. Yes. In some instances, for instance in Cobb, the one side of the stop function is performed by the frame member. Up in Rix the one side of the stop function is performed by the nut on the end of the spring bolt.

Q. In some, such as Glencoe, Petersen—well, I will just take those two as examples—is the stop function performed by a contact of the movable member, some part of the movable member with the fixed member or some part of the fixed member? A. That is true in both Glencoe and Petersen.

Q. Are there other references in the art where the stop function is performed by a direct contact of the shank itself with a fixed part of the clamp or some part of the fixed part of the clamp? A. Yes.

Q. For example? A. That would be true in 811.

Q. Are there instances where a stop function is performed in the art by direct contact of the shank itself with the beam of the plow? [584] A. That is true in Cobb, for example.

Q. If a matter of how the shank is to be positioned were before you, would it seem quite clear that there is a number of different selections that might be made from the existing art as to how the shank would be positioned? A. Oh, certainly. Any part of the movable organization coming in contact with any part of the stationary organization may provide such a stop mechanism.

Q. Is there anywhere in the art, as it existed without modification, where you found a longitudinally extending underface of a fixed member which was in normal contact with a corresponding longitudinally extending upper face of a hinge member or pivot member? A. I don't recall any such at the moment.

Q. If we would accept a lug element on the fixed member contacting a lug element of the movable member as satisfying such call for longitudinally extending faces, would you find that in the art? A. Oh, yes. That is true particularly in the Glencoe use structure.

* * *

[585] Q. All right, Mr. Fishleigh, let's turn our consideration to the question of mechanical elements of the claims of this patent as compared to the two Deere structures that are accused here.

* * *

Have you prepared charts from which to work in making that comparison? A. Yes, I have.

Q. Will you take first the chart which you have prepared pertaining to Claim 1 of the patent and to the Deere structures and place it on the easel.

(Witness complies.)

Q. We have identified that chart as Defendants' Exhibit 28, and it is now on the easel. Will you please explain [586] that chart, the mechanical elements as contained in the claims, first considering the Deere 650 structure, Mr. Fishleigh, and if it will help any during the course of the discussion I would like for you to consider the actual clamp itself and also, if it will help the large drawings of the Deere 650 clamp. A. In case we should need them, I will put an enlarged drawing of the Deere 650, which we had prepared, on the easel. It has been marked for identification as Defendants' Exhibit 26.

Q. Now, at the very outset before we start the discussion I would like to bring out, on the drawing of the Deere 650 clamp in Fig. 2, is there any part which is not oriented as it should be? A. Yes. Inadvertently in making this drawing we got the spring seat member 59 turned around. We worked from a sample of it and it is possible that it was misplaced when it came to us. Anyway, we did that and it should be just the reverse so that this little projecting flange which now appears at the lower right should be over and contacting the top of the member.

Q. That particular feature was brought out on the plaintiffs' case. As we have it in the drawing, the spring seat washer is situated as I have now placed it on the clamp? A. That is correct.

[587] Q. Whereas it should be oriented with the depending lug element on the edge at the rear, should it not? A. That is correct.

Q. Does the fact that the washer is turned around in the drawings have any bearing whatsoever upon the consideration of the mechanical elements as we will come to them in the following discussion? A. No, it does not have.

Q. All right. Now then, will you go ahead with an analysis of the mechanical elements of Claim 1 as they apply to the Deere 650 clamp. A. Incidentally, the left-hand portion of this chart, except for the title at the top, is the same as and, in fact, is a photostatic reproduction of the similar chart which we previously discussed in connection with Claim 1 of the 798 structure.

The introduction and the first element in their general terms I have said yes, that is present in defendant's structure, the 650.

The second element, a fixed member, I have said no, and that "no" goes to the portion of "a longitudinally extending underface terminating forwardly of the transverse member," and my reasons therefor are expressed in the note as follows:

"Defendant's 650 Series Structure does not [588] have a 'longitudinally extending underface' on the Fixed Bracket Member, in the Graham sense.

"In Graham the Fixed Member 11 has a long Underface 60 which is held in clamping engagement with the similar long Upper Face 59 of the Plate Portion 51 of the Movable or Shank Attaching Part 12." That is the long face which extends from near the pivot point clear to the right-hand end of the fixed member in Graham.

"In Defendant's structure there is no portion of the Fixed Member 15 which is structurally similar to the Graham Underface 60. Moreover, there is no portion of Defendant's Fixed Member 15 which is normally held in contact with any portion of the Shank-Attaching Member 35." And we will remember that the stop function here is provided as between the lug 44 on the right-hand end of the fixed member coming down and contacting the right-hand or forward end of the shank 14 as shown here at the right end of the Fig. 2 where I am pointing to it presently.

Q. Mr. Fishleigh, giving consideration to the prior art that has been considered here and giving consideration to the manner in which a specification of the longitudinally extending underface entered into and came into this claim and the prosecution of this patent and the [589] specification as set out in the file wrapper of the functions performed by that face, did you feel that the longitudinally extending underface is properly to be considered as an element, a structural element in the 798 specification? A. I feel definitely it is a structural element or at least a limitation on the fixed member which cannot be slid over lightly, and in view of the prior art and in view of the file wrapper proceeding, I believe that no mechanical equivalence, no range of equivalence could properly be given which would extend far enough to cover a structure that is not in this sense a longitudinally extending face, but merely the bottom of a lug, and which does not contact the pivoted member directly at all. So I have no hesitancy in saying no.

Continuing with the note, "On the contrary, the lower portion of the Lug 44 on Defendant's Fixed Member 15 is yieldably held in direct contact with the forward end of the Tool Shank at Standard 12.

"Defendant's Fixed Member has no Ears which extend rearwardly from any Under Face of the Fixed Member which is the same as or similar to the Graham Underface 60." Again, that refers to the fact that in the first place there could be question as to [590] whether there is any part of this fixed member which can properly be said to be ears, but in any event they do not extend rearwardly from any end of a fixed member as they do over in Graham 798 where the underface, the horizontal faces end at the point to which I am now pointing, just to the left of the left-hand end of the frame member, and those ears extend from that point.

Q. It would certainly be recognized, of course, that the Deere 650 has a portion of the fixed member which does mount pivot pins? A. Oh, certainly.

Q. And performs a function? A. Certainly.

Q. Pass on then to your next portion. A. The third element I have said "No" to, it deals with the shank attaching member, and of course in the broad aspects there is a shank attaching member in the 650 structure, but I have said, "No" because of the specific limitations and my note indicates, "There is no Upper Face on any Elongated Plate Portion of defendant's Shank Attaching (hinge) Member 35 which corresponds with and is normally in contact with any underface of its Fixed Member 15. Moreover, there is no part of the Hinge Member 35 which contacts the Fixed Member 15.

[591] "In defendant's 650 Series Structure the Forward End 14 of the Tool Shank 12 is yieldingly held in contact with the lower portion of the Lug 44 on the Fixed Member 15 to maintain the normal plowing depth of the tool." In other words, there is not on the shank attaching member any upper face which, as the element indicates, corresponds with and is normally in contact with the underface of the fixed member.

Now, as over in 798, where that wording is literally and functionally true and applicable to that structure and it differs completely from the arrangement in the Fig. 2 structure.

Q. The Fig. 2, you mean Fig. 2 Deere 650 structure, do you not? A. Yes, I do, toward the right of the Defendants' Exhibit 28.

Q. All right. Now then, the specific language of that element of the claim with respect to contacting faces we have already pointed out in connection with the file wrapper consideration, and what is your opinion as to whether it should be given some application, considering the file wrapper history and the prior art? A. Well, considering the file wrapper history particularly and as it developed because of some of the prior art, even some that in my opinion is less directly pertinent [592] than some here, in view of that I believe that it is a definite limitation which cannot be disregarded, for which the structure shown in the Deere 650 cannot be reasonably said to be a mechanical equivalent.

Q. All right. Pass then to the next element. A. The next element, "Means connecting the elongated plate portion with the shank for maintaining the upper face of the shank in constant continuous contact with the underface of said plate portion of the shank attaching member."

As I pointed out previously, the structures which provide the response for that element consist both of the bolt 56 and the depending loop 57 in 798, and I have said no. there is not in the 650 structure any means which is the same as or the equivalent of that combination of two members or two elements, both of which are required to provide the functioning called for in element 4.

My note indicates, "Defendant's 650 Series Structure has no means connecting the Hinged Member and the Tool Shank which is the same as or the equivalent of, the Graham Bolt 56 and Depending Loop 57. Both of these parts are essential in Graham to maintain the upper face of the shank in constant continuous contact with the underface of the Shank [593] Attaching Member." Both of them, incidentally, are for fastening the shank directly to the hinged member.

Continuing:

"The Bolt 41 is the only means in Defendant's structure for connecting the Shank 12 to the Hinged Member 35. The Bolt 41 does not maintain the Shank and the Hinged Member in constant continuous contact along their entire corresponding faces during all stages of operation. Excessive movement or rebound of the Shank is prevented by the Cross Piece 77 extending between the Side Wall Sections 17 and 18 of the Fixed Lower Bracket 15. This is radically different both structurally and functionally from the Graham Depending Loop 57 which is an integral part of the Shank Attaching Member."

As to the fifth element—

The Court: Right there, I would like to see the Deere 650 series, understructure 77, as it pertains to the underface of the shank.

(Said structure was exhibited to the Court.)

The Court: That shank just rests on this lower portion of the fixed piece there, rotates on that?

Mr. Morris: It does not rotate on that at all, Your Honor. Again without testifying, it is our position that the piece there is merely a supporting [594] piece, the shank doesn't rock on it, doesn't rotate on it, it doesn't move along with the shank. It is a stationary element.

The Court: Does the shank rest on it?

Mr. Morris: Well, actually—I probably ought to put that in evidence by testimony of another witness. But no, it does not rest on it in its normal position. There is a deliberate clearance provided so that the shank does not rest on that element even in its normal static position.

Q. Will you pass to the next element then, Mr. Fishleigh, of the chart. A. The next element, the transverse pin, and there is of course the transverse pin in the Deere 650 upon which the hinged member pivots, but I have said "No" to the element because of limitations following, and my note indicates the following reason therefor:

"Defendant's 650 Series Structure has a Pivot Pin 19 which connects its Hinged Shank Attaching Member 35 to the Fixed Lower Bracket 15. However, Defendant's Structure has no normally contacting faces (or other portions) between the Fixed Member and the Shank Attaching Member. Hence, the Pivot Pin is not at the rear ends of any such faces."

In other words, the element called for the [595] transverse pin connecting the shank attaching member to the fixed member at the rear ends of said normally contacting faces, and I have checked that back and the only normally contacting faces which are mentioned are the faces of the fixed member and the shank attaching member. In other words, as indicated up in Element 3, "an upper face corresponding with and normally in contact with said underface of the fixed member." That is the only place that that reference is and it must, in my opinion, be the antecedent for this reference in Element 5.

Then the last element, 7, means having connection—

Q. First, element 6 of course you have answered "Yes," and that is the spring element, clearly present in Deere

650, is that it? A. That is right. But it provides that these are means for maintaining the "normal contact of the upper face of the plate portion of the shank attaching member with the underface of the fixed member to maintain the normal plowing depth of the ground working tool."

I have said "No" clearly, and my note indicates that "There is no contact, in Defendant's 650 series structure, of any portion of the Shank Attaching Member 35 and the Fixed Bracket Member 15.

[596] "On the contrary, the Forward End of Defendant's Shank 12 is normally maintained in direct contact with the lower portion of the Lug 44 on the Fixed Bracket Member 15 to maintain the normal plowing depth of the tool," and consequently there are no means for holding the two surfaces or faces together as called for in this element.

Q. Mr. Fishleigh, as we have previously mentioned, perhaps in another connection, but element 7 is another one of the elements which is a so-called means element, is it not? A. That is correct.

Q. For which there is no specific structure defined but the element is in terms of the function which it performs? A. That is correct, sir.

Q. When the element is defined in that fashion, do you feel that there is a fair response in a structure to the element if those functions called for are not performed? A. No.

Q. And substantially in the manner as specified? A. No, I do not. Not only that, but it must be limited to the structures shown in the patent in suit and mechanical equivalents thereto. It can't be any old structure which happens to perform that function if it is not a proper mechanical equivalent therefor, that is, [597] proper mechanical equivalent of what is shown in the patent.

Q. Of the structure as shown in the patent? A. That is correct.

Q. Now, if we disregard certain of the specific limitations of the elements, mechanical elements as set out in the claim, would you find a response for those mechanical elements in any portion of the prior art, any one element of the prior art, without any modification whatsoever? A. Yes. I have indicated on the chart that if those elements be broadly construed in an attempt to find the response of the accused structure by disregarding certain of what I believe are critical elements, in the light of the travel of this patent through the Patent Office, then they would find a response in the Glencoe structure.

Q. I wonder if for purposes of—well, you say you have that set out on the chart? A. Yes.

Q. Is that the Glencoe device on the right-hand side and then the note down underneath the Deere 650 disclosure? A. Yes. The note underneath the drawings of the Deere 650 indicates the things that are to be disregarded and the note runs over to indicate, as it says at the end, "Then the mechanical element would likewise find [598] response in the Glencoe prior use structure."

Q. Now, I would like to consider that matter with some particularity. I would like to take Claim 7 from the file wrapper as it exists—I prepared a separate exhibit here for ease in handling, which I marked as Defendants' Exhibit 8-D. I would like for you to take that claim, which does not contain the specific limitational language with respect to longitudinally extending faces, and so on, which we have been discussing here, and tell me whether or not you can find the mechanical elements as set out in this Claim 7 present in the Glencoe structure without any modifications at all. A. Shall I take it up element by element?

Q. Take it up element by element and give us your opinion on each of the elements as you have them set out there. A. "In a plow having a frame and a ground working tool provided with a shank adapted to rock relatively to the frame when the plow is in operation in a forward direction." Clearly Glencoe is a plow and it does have a frame, the portion "C" colored violet, as shown in Defendants' Exhibit 17, and the shank 19 is adapted to rock relatively to the frame when the plow is in operation in a forward direction.

"a mounting for attaching and supporting [599] the shank of the ground working tool from the frame including—" Well, certainly there is a mounting referred to generally by the letter A.

"1. a part adapted to be fixed to the frame." That is the fixed portion colored yellow in Defendants' Exhibit 17.

"—and having

"a. spaced apart depending flanges to form a downwardly opening way to receive an end portion of the shank"—those are the downwardly—the depending flanges 6, as shown in Defendants' Exhibit 17.

"b. spaced apart ears extending rearwardly in substantially aligning registry with said flanges,"—those are the flanges or the ears, rather, shown at the lower portion and they do extend from that—substantially aligning relationship with the depending flanges which form the way and the ears out here going on from that in much the same manner as shown in the 798 drawings.

"said mounting also including a movable part having a transverse ear between said spaced apart ears of the fixed part."

Q. Stopping at the introductory part, before coming to "a" part, "said mounting also including a movable part," would that obviously be present? A. Yes. In the dark green movable or hinged or shank [600] attaching member 21.

Q. Go ahead with the further limitations of that element. A. "a tranverse ear between such spaced apart ears of the fixed part," that would be the ear not numbered specifically in this structure but the ear in which the hole 7 is placed which permits the pivot pin 8 to pass through, and that is right opposite the flanges or the ears on the fixed part.

Q. As shown in the actual device? Would you point it out, please? A. Yes. This part that I am referring to is an ear, reinforced at the sides by flanges, but it has the same kind of an ear that is referred to here in the patent in suit.

Q. Part b. A. "a shank engaging portion extending in said way." Here the shank engaging portion is the upper portion of the hinged member or shank attaching member, and it is provided for engaging the bottom face of the shank.

Q. Element 3. A. "a pivot pin extending through said spaced and transverse ears for pivotally connecting the movable part with the fixed part." Now that is true, the pivot pin 8, colored light blue, does extend through the two ears, and the two—well, projecting down from the two side flanges 6 and also through the ear on the hinged or shank attaching [601] member.

Q. Number 4. A. "means connecting the end portion of the shank to the shank attaching portion." And that would be found in the bolt 32 and the stirrup 29, which do connect the end of the shank to the shank attaching or hinged portion, and incidentally they are substantially the same device, a bolt and a stirrup arrangement, the same type of device as shown in the drawings of the 798 patent.

Q. And element 5. A. "resilient means connecting said part to hold the movable"—

Q. I believe that should be plural, said parts. Let me check that to be positive: It should be plural. "Resilient means connecting said parts." There should be an "s" on there. A. All right. "resilient means connecting said parts to hold the movable part in yielding contact with the fixed part so that when the shank is rocked the end portion of the shank will cause the movable part to move downwardly within said way along with said end portion of the shank and back to contact with the fixed part."

Now, all of that describes perfectly the [602] arrangement in Glencoe, that is, the resilient means being the spring means and the connecting bolts. They do hold the movable part, that is, the Glencoe member 21, in yielding contact with the fixed part so that when the shank is rocked the end portion of the shank, that is, this portion 19, as shown in Fig. 2, will cause the movable part to move downward. As that is rocked, that causes the movable part to move downwardly within the way, that is, the way between the flanges and ears of the fixed part, along with said end portion of the shank and back to contact with the fixed part.

Q. Mr. Fishleigh, in that claim which was originally in the application and was rejected and canceled, there is none of the specific language of limitation defining the structural elements as we just discussed them in Claim 1 of the patent, particularly with respect to the longitudinally extending underface of the fixed member or the upper face of the hinged member which is normally in contact with the underface of the fixed member, is there? A. There is no such recitation and that of course carries over into some of the other elements where—like these last elements, where here in original Claim 7 or application Claim 7 it merely indicates that the hinged member will come back to contact with the fixed part [603] generally, whereas in the last element in Claim 1 it provides that it will come back to proper contact between the longitudinally extending face and the underface of the fixed member and the upper face of the hinged member.

Q. If those particular structural limitations, as set out on Claim 1, are disregarded then we would come back, as you have already stated, to a direct application of the mechanical elements in 798 to the Glencoe structure without any modification of it? A. That is my understanding of it, yes, sir, and that is what my note indicates.

Q. Now then, turning your attention to—let's see, I believe Claim 1 is the only one charged as to 650, so let's turn our attention to the Deere 100 structure, and again consider the mechanical elements of Claim 1 in reference to that structure. First, before you start that, have you prepared the drawings of 650 which are shown on the fly of the exhibit? A. Yes, and those are the same—now, are you asking about 650?

Q. I beg your pardon, 100. Excuse me. We have already covered the 650. I am talking about the drawings of 100 which are on the fly parts of the exhibit. A. The drawings of 100 were prepared and have been marked [604] as Defendants' Exhibit 27. They are presently on the easel.

Q. Were those drawings made in your office? A. Yes.

Q. Under your supervision? A. That is correct.

Q. And made to reflect the actual structure of a Deere 100 clamp which you had there? A. Deere 100 clamp.

Q. Which you had there? A. That is correct.

Q. And in your opinion were they accurate disclosures of the actual disclosure of the clamp? A. Yes, they appear to be, and I found no discrepancy in them.

Q. All right. Then go ahead with the discussion of the mechanical elements of Claim 1 in relation to Deere 100. A. The first element to which I have said "No" is the second element. The fixed member deals again with the longitudinally extending underface. It will be recalled that in this structure there is nothing on the fixed member which is the same as or similar to the longitudinally extending underface, that is, a relatively long and relatively wide underface, flat [605] longitudinally extending face of the fixed member, as shown in 798. There is nothing of that sort at all. There is no contact between the fixed member and the pivoted member directly, the only contact being down through an area marked 25 where the hinged member does comes in contact with the frame member 1 and provides at that point the stop means for properly locating the plow at normal operating conditions.

But in view of the circumstances of the allowance of these claims or the amendment of these claims in the file wrapper, I cannot agree with the testimony that has been given here that it is proper to construe the frame member of the plow to which this clamping member is attached and to which the clamp is supposed to attach the shank, I cannot consider that that is the same as or the equivalent or can be used in providing a response in a structure where there is clearly no contact between the hinged member and the fixed member themselves. So I have said "No" to that element and my note points out the material which I have just suggested.

Q. Excuse me just a minute. In that connection, with the stopping or positioning of the shank in its normal operating position by means of a contact with the frame member of the plow, do you find that disclosed in [606] segments of the prior art? A. Yes. Yes, that is old in the prior art.

Q. For example, of those that we had on the easel here earlier, those contained in the chart, Defendants' Exhibit 11, is there an example where the stop is actually against the frame of the plow? A. Yes—well, in Dunbar the stop is between the hinged member and the frame of the plow, and in Cobb the stop is between the shank member and the frame of the plow.

Q. Now, go ahead with your explanation, please. A. I have said "No" to Element 3. There is of course a shank attaching member in the Deere 100 series, but it is not a shank attaching member which has an upper face corresponding with and normally in contact with any underface of the fixed member. So my note indicates that that is the basis for the "no", there is no longitudinal surface here which contacts the fixed member, and I do not believe under these circumstances it would be proper to construe as an equivalent situation or a mechanical equivalent structure a contact as between the pivoted member and the frame member, when this limitation was put in under the circumstances it was and is as explicit as it is.

Now, as to Element 4 I have said "Yes," because in this situation there is the bolt 13 and the [607] stirrup 11 which correspond quite closely to the bolt and stirrup they have used for connecting the elongated plate portion with the shank in the 798 structure.

Element 5, I have again said "No." There is of course a transverse pin, but it is not for connecting the shank attaching member to the fixed member at the rear end of the normally contacting faces. In the first place there are no normally contacting faces between the fixed member and the hinged member, and the pivot is not even at the rear of the portion 25 where the hinged member contacts the frame member to provide the stop. So there is a substantial variation and unless that distinction is maintained I believe that the structure would run into the prior art.

And the last element, 7, means for connecting the forward end of the shank with the other end of the coil spring, and so forth, is substantially—finds the same basis for the "no" that we found in the 650. That is, again there are no underfaces of the fixed member which contact the upper face of the hinged member. And here again I have indicated that if the mechanical elements be broadly construed—in other words, carried back to something similar to the elements of Claim 7, original Claim 7 that we just discussed, if that degree of breadth be given to the elements we would then [608] find a complete response for those mechanical elements in the Glencoe prior use structure.

Q. Turn your consideration then to Claim 2 of the patent as it relates to Deere 100. A. I have prepared a chart, which is on the easel, and marked as Defendants' Exhibit 29, covering the presence or absence of the mechanical elements of Claim 2 in the Deere 100 series structure.

Q. Now, down through those elements which are, as far as they are worded, precisely the same as Claim 1, of course the distinction would be the same. There is no need to discuss them further. So I would like for you to take up where the departure in the elements commences in Claim 2 and consider only from that point forward. I believe that would be in Element 3 is where our language starts changing. A. Well, yes, but I don't believe that in this instance the changing portion there—

Q. I understand that, but since the language of the element in Claim 2 is not precisely the same as the corresponding numbered element of Claim 1, I would like for you to indicate your opinion as to why there is no response in the Deere 100 structure. A. Well, as the note indicates, "There is no Upper Face on any Elongated Plate Portion of Defendant's Shank [609] Attaching Member 8 which corresponds with, and is normally in contact with, any Underface of its Fixed Clamp Members 2, 3. Moreover, there is no part of the Hinge Member 8 which contacts the Fixed Members 2, 3.

"In Defendant's 100 Series Structure, the Shank Attaching Member 8 is yieldingly held in direct contact with the frame Member 1 to maintain the normal plowing depth of the Tool and never touches the Fixed Clamp Members 2, 3 at all.

"Defendant's shank attaching member 8 has no lug disposed above the plane of any 'underface' of the Fixed Clamp Members 2, 3."

In other words, that is a place of departure in that in this claim it calls for the shank attaching member having a lug and dropping down, disposed at the rear ends of the plate portion and above the plane of the underface of the fixed member. The lug is not above any underface of the fixed member in the Graham 798 sense.

Now, the last two elements I believe are again comparable to the elements of Claim 1 and the note indicating that if the mechanical elements are so construed, broadly construed as to read on the defendant that they would then lead toward the prior art and find [610] a response in the Glencoe structure.

Mr. Morris: You may cross-examine.

Cross-Examination by Mr. Gold.

Q. Mr. Fishleigh, I believe you stated that you or your firm had done product engineering on new products. Tell us on how many inventions have you had patents issued? A. None, sir.

Q. Are you admitted to practice law? A. Yes, sir.

Q. You stated you had done some consulting work for agricultural companies. Would that be in connection with chisel plows? A. Well, my only work with chisel plows specifically dealt with the Jeoffroy work and the work here, but it did involve rather extended work in both instances.

Q. I believe you said you first became acquainted with chisel plows in the fall of 1950? A. Oh, it was I think perhaps somewhat earlier than the fall, although somewhere in around that neighborhood.

Q. And when you mentioned that you had observed some of the prior art in operation you weren't referring to such devices as shown in the Rix patent or the Cobb patent? [611] A. No, I was not referring specifically to those, no, sir.

Q. You have never seen those in operation, have you? A. Not ones that I knew to be those, no.

Q. In the first Graham-Jeoffroy suit, I believe you stated that there were two patents involved in that suit? A. Yes, that is my recollection of it.

Q. One of those was the 811 patent? A. That is right.

Q. And it was held valid and infringed by the Court in that suit? A. That is correct.

Q. And the structure that was held to be an infringement of the 811 patent was this Jeoffroy SC-580 clamp, Defendants' Exhibit 2? A. Yes, sir.

Q. In that same suit some of these same prior art patents were discussed by you, were they not? A. Well, I wouldn't be surprised, but I haven't refreshed my recollection as to what the prior art was there, but I would suspect there might have been some that were similar.

Mr. Morris: If there are any you would care to call out, Mr. Gold, we will be happy to stipulate whatever was considered there.

Q. (By Mr. Gold) Have you ever been in Deere & Company's [612] patent department? A. Yes, I was in their office a very short time one day, perhaps three quarters of an hour, half an hour.

Q. Did you see the library of patents? A. Not in any detail at all. As we passed the door it was pointed out to me, but I was not taken through it.

Q. How many employees do you have in your consulting engineering firm? A. There are four of us at the present time.

Q. How many are draftsmen? A. One.

Q. Is your brother still head of the firm? A. My brother passed away in 1947, sir.

Q. How many ladies does your firm employ? A. One.

Q. Can you explain what is meant by the term suction in connection with plows? A. Oh, I think I can, in a general way.

Q. Would you do so? A. Yes. If a plow point is put in the ground or is headed up it will not tend to penetrate, whereas if it is put in the proper position or tilted down a little, it will tend to go down into the ground to the proper working depth, be drawn down to the proper working depth.

[613] Q. Is suction important when a spike is used on the lower end of a plow point? A. I don't think it is as important, certainly as when sweeps are used, for example, or other structures.

Q. Are you admitted to practice before the United States Patent Office? A. No, sir.

Q. You don't know how many patents the Patent Office Examiner considers in regard to a patent application, do you? A. Well, not in any particular instance, no.

Q. You wouldn't know whether it was 500 or more, would you? A. Well, I am sure that it varies. I haven't been there and watched them, but I am sure that it varies from a very few in some instances to a very considerable number in other instances.

The Court: * * * Court will be in recess until 10 a.m. tomorrow.

(Adjournment.)

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[614] MORNING SESSION, MONDAY, MAY 7, 1962

CLARENCE T. FISHLEIGH resumed the stand and testified further as follows:

Cross-Examination by Mr. Gold (Continued).

Q. Mr. Fishleigh, I believe you stated you have not had any patents issued to you? A. That is right.

Q. Actually you have not even been shown as a co-inventor on any patent, have you? A. No.

Q. In what state are you licensed to practice law? A. Michigan and Illinois.

Q. Your work in 1950 relative to chisel plows was merely observing a few demonstrations, wasn't it? A. Oh, I wouldn't quite say observing them. I would say conducting some work riding plows and indicating what was to be done, what conditions they were to be run under, and then of course observing the tests that were conducted by the plaintiff in this litigation out at the Graham farm.

Q. They were demonstrations of the Graham 811 structure and the Jeoffroy SC-580 structure, were they? A. Yes.

* * *

[617] Q. (By Mr. Gold) Now, you mentioned some model of a device that you suggested that was in the first Jeoffroy case. Tell us what kind of model that was. A. Well, my recollection of it is that we took one of the 811

devices—I haven't seen it now for 11 years and don't recall precisely, but fastened the shank to the hinged member and also put a plate over the pivot sections so that we had a fixed enclosed pivot for the hinge instead of the slot arrangement of the 811, to show what would happen, to show the functioning, as for [618] as the courtroom demonstration was concerned, of the 811 structure with the shank fastened to the hinged member.

Q. And the shank was still between the fulcrum plate and the fixed member? A. Yes.

Q. You used two bolts through the plate and the shank, did you not? A. That is my recollection of it, yes.

Q. That was in an effort to show the Court there wasn't any longitudinal movement necessary between the fulcrum plate and the shank in the Jeoffroy structure? A. Well, that was part of it, to show that the device would operate satisfactorily under those conditions.

Q. You used two bolts in a similar manner to what Drader, et al., has in Patent No. 417,775? A. I am not sure—what is the number of that patent?

* * *

A. Well, in a very broad sense only. Drader I see does show a connection between the shank and another member by means of two bolts or two rivets.

* * *

[619] Q. You indicated that in your opinion the 811 structure was a poor design? A. I have no hesitancy about that, sir, I think that is true.

Q. You also indicated that it was subject to a lot of wear? A. I think that is also true. That has been my observation of it in the field, both in 1950, '51, particularly '51, and also more recently. I think I could go so far as to say that out of—oh, a dozen or more plows having in the neighborhood of a hundred or more tools that I have never seen one which was not worn rather substantially.

Q. Of course you will agree that the Deere 650 and 100 series spring clamps wear also, wouldn't you? A. Any machine part wears, so the answer to that is yes, but by degree quite noticeably different. I have seen plows that had been in the field a considerable time that showed very little, if any, wear of the Deere 650 type, whereas, as I say, I have never seen an 811 type structure which had been in the field as much as a year [620] that didn't show very substantial wear.

Q. The pins will wear in both the Deere structures, won't they? A. Oh, yes, certainly.

Q. They wear substantially? A. That will depend upon the care with which they are maintained and the amount of wear. Any part will wear out in due course if it is used hard enough.

Q. You have seen them where they would slide loose on the pin, could be moved around, up and down? A. Well, not as loose as you indicate. I have seen them with some slight looseness but not perhaps as much as you indicate with your hands.

Q. You just saw very slight looseness? A. Relatively slight, yes.

Q. Any two faces that operate together will wear, won't they? A. In what sense do you mean operate together? Come together or slide together or what?

Q. Either way. A. Well, in a good design there will be relatively little wear in two faces that come together if the faces are broad enough or large enough to absorb the effect. If the faces are small enough and the force great enough there may be a wear or peening type of action. [621] Q. You have been testifying here primarily as an engineer, haven't you? A. Well, as an engineer, but I believe what is frequently referred to in these cases as a patent expert.

Q. In these plows that we have under consideration, such as the Graham 798 structure and the accused structure, the tool carrying shanks have a certain amount of resiliency and flexibility, do they not? A. Yes.

Q. Under shock loads there is some bending in the shank, isn't that true? A. I didn't get that.

Q. Under shock loads there is some bending in the shank, isn't that true? A. Do you mean bending in the sense of a permanent bend or just the resilient bending?

Q. There can be both, can there not? A. Well, there can be if the load is great enough and if no—not so likely to be in plows with the spring clamps. But otherwise—that is, the test is simple enough. If the bending which does occur exceeds the elastic limit of the shank it will take a permanent set. If it is within the elastic limit of the shank it will come back to its normal position ordinarily.

Q. In normal operation there is continually some bending [622] within the elastic limit of the steel, is that right? A. I believe that is correct. I believe that is intended in this type of plow.

Q. You have seen shanks though that have been bent and straightened out to some extent, haven't you? A. Yes, I think I have seen one or two such instances. However, those particular ones occurred under testing conditions where we subjected them to far greater loads than would be expected to be encountered.

Q. So you didn't see any shipped in from the field that some farmer had straightened out? A. I don't recall at the moment, although it is quite possible.

Q. In such a device as we are considering here it would be undesirable to have all of the bending stress of the shank concentrated at one point, isn't that right? A. Oh, I think that is generally true, yes, sir.

Q. If the bending stress is concentrated at one point then after a period of use there would be a tendency for fatigue or crystallization that would cause breakage, is that right? A. Well, if you could concentrate it at one point in a device of this kind I think that is probably true, that is, that is the way, for instance, if you take a piece of tin and you want to break it, for example, you [623] do concentrate the twisting back and forth at one point and sooner or later it will break and under those conditions quite relatively sooner. I had occasion to do that sort of thing with one of these little things you use in a garden last weekend, so-called Twistems, where I wanted to break it I just took it closely and bent it sufficiently at the one point until it broke.

Q. You concentrated the stress at that one point? A. That is right, and not only concentrated the stress but gave it abnormally high stress for what it was intended by bending it far beyond its elastic limit.

Q. If the bending is concentrated at one point it doesn't have to be bent beyond its elastic limit to cause crystallization, does it? A. Oh, if you concentrate the bending at the one point it simply has the effect of increasing the bend. It isn't so much that it is at one point as it is that if it is at one point it is a greater stress normally and will wear less or shorter time than if it were subjected to a lighter load. But if you give it the same total stress at one point or the same total stress throughout it, I believe there isn't too much difference, that is, the same total stress at one point or that same amount of stress per unit of space over the whole thing, it would all wear out.

[624] Q. You say wear out? Are you distinguishing between fatigue or crystallization? A. No, I am not thinking of wear in the sense of rubbing wear, I am thinking of it in the sense that you are speaking of it, fatigue or crystallization.

Q. You do agree that the 798 patent is effective as an operative structure, do you not? A. Oh, I think one which is operative. I am not sure about it being operative in the way that it is described, but I think it would work.

Q. The Jeoffroy HT-5 was an operative structure, was it not? A. Yes.

Q. And commercially successful?

Mr. Morris: We have stipulated that, Mr. Gold.

Mr. Gold: I would like for the witness to answer my question.

A. Well, I have no personal experience as to the extent of use of the HT-5. I know or have heard that it has been built and assume that it would be called commercially successful, but I haven't had personal experience with it.

Q. Will you refer to Defendants' Exhibit 21-C? Do you have a copy of that? A. What is it? Yes, I have a copy of it here. That is [625] Sheet 3 of the drawings, is it?

Q. Yes, sir. A. Yes.

Q. Can you tell us the purpose of the engagement of the upper face 59 of the plate portion 51 with the underface 60 of the fixed part 11? A. I believe I could.

Q. Will you do so? A. Those numbers I believe don't appear, do they, on this sheet?

Q. Possibly they do not.

The Court: I wonder if you would repeat those numbers. I couldn't follow you on that.

Mr. Gold: Maybe we should also look at the Exhibit 21-D.

Q. (By Mr. Gold) My question was, what is the purpose of the engagement of the upper face 59 of the plate portion 51, that is the plate of the hinged member, with the under face 60 of the fixed part 11? I believe those are the ones you have colored red, Mr. Fishleigh. A. Yes. Now, you asked me if I could tell you and I said yes.

Q. Will you do so. A. Primarily to provide a stop for the shank and the hinged member 51 so as to properly position the tool [626] in normal operative position, and to have rather broad extended surfaces so as to reduce what has been suggested in other instances as wear on other surfaces.

Q. In other words, it spreads the force of the impact over a large area so the unit stress from the impact is small? A. That is correct.

Q. Now, the fixed part 11 is secured to the beam or frame 1 so that they operate as a rigid total member, is that right? A. Well, I don't know about operate as a rigid total member. Certainly so that it is held fixed to the frame member and presumably doesn't shake loose. But it is detachable.

Q. When you put the fixed member on the beam it is particularly desired though—you want it to stay put, don't you? A. Certainly.

Q. And I believe you said that when you have small areas subjected to hard impacts there is a possiblity that the members could be peened over? A. Well, not necessarily peened over, but peened.

Q. That would be kind of like when you use a chisel and a hammer and you hit on the end of the chisel with the hammer it tends to peen, the chisel does? [627] A. Oh, it could. I had in mind more the situation that you get if you hit a surface with a hammer, which would have a tendency to compress that surface, not necessarily bending over, although that could happen under some circumstances.

Q. It does on chisels, does it not? A. Yes, frequently.

Q. Now, tell us the function of the loop portion 57 in the Graham 798 structure. A. Well, as set forth in the mechanical element of the claim, it is in the specification itself, relatively little is said about it. I am reading from column 3, beginning in line 50, "The moveable part also includes a depending loop 57 having a rectangular passageway 58 substantially conforming to the cross sectional shape of the end portion of the shank whereby the end portion 8 of the shank is passed therethrough and embraced by the loop portion to rock with the moveable part of the pivot pin 48." But as set forth in one of the elements of Claim 2, that depending means or stirrup means 57 is said to cooperate with the bolt 56 in maintaining the upper face of the shank in constant, continuous contact with the under face of the plate portion, so that on that basis, that loop and the bolt cooperate to maintain the shank and the plate member in constant, [628] continuous contact, as illustrated in the drawing, Fig. 6, on—what was it, 21-C?

Q. Yes, sir. A. Even in the tilted position such as shown in Fig. 6, and of course as shown the same way in Fig. 2 on Defendants' Exhibit 21-A.

Q. Now, can you tell us from your observations of these types of devices the function of the loop in actual plowing operations? A. You mean if not built in accordance with this patent?

Q. No, sir, I mean where it has the loop on it in actual plowing operations, what is the function of the loop? A. Well, if built in accordance with this patent—or are you asking me about some specific other structure?—but if one were built in accordance with this patent it would do what I have just said, and of course in addition to that or as a part of that would resist any rebound, any tendency of the shank to move away from the hinged member after the end of the tool went over an obstruction.

Q. In plowing when the shank is in the ground the force would be upwardly and rearwardly and that force would be tending to push the shank away from the loop, would it not? A. Tending to, insofar as the operation were uniform and [629] steady, if such an operation is ever possible. But to the extent that there is a flexing or vibration in it, resilient operation, I think it would be alternately up and down, the tendency, or the forces.

Q. Then the force would be applied against the loop only on the rebound or the downward force on the shank? A. Well, yes, in the ground or in plowing operation and if built in accordance with the patent I would think it would have a tendency to help at least, support the weight of the plow if the plow were out of the ground.

Q. And it would be cooperating with the bolt to keep the shank from separating from the plate in the downward rebound of the shank after hitting the obstruction? A. Under all circumstances it would be cooperating with the bolt to maintain the shank in constant continuous contact with the plate member.

Q. Even when the forces on the shank would force the plate away from the bottom loop? A. Well, it would be cooperating at that time. If there are no forces tending to separate it then it perhaps doesn't need any action. Neither does the bolt. If there is no tendency to separate them then they would stay put. But there would be few operating conditions under which there wouldn't be at least some stress from time to time and rather close together.

[630] Q. In plowing operations when would the bar on the fixed member under the shank of the Deere 650 series function? I am referring to this bar here, Mr. Fishleigh, (indicating). A. Only when there was a sufficient rebound to carry the shank beyond the clearance which is provided at that point.

Q. If you wanted to make a hinge member of the Graham 798 patent, you would cast it, would you not? A. Oh, I might. That would depend to a large extent on the number and one thing and another. If I were making one single one I probably would not.

Q. If you were going in production on plows, there would be large numbers made, you would cast it, would you not? A. Oh, I think that would be a very logical way to do it, yes, sir.

Q. You would cast it in such a way that you wouldn't have anything to do in the way of machine work on it except maybe drill the hole through the hinge pin, is that right? A. Well, insofar as possible, that certainly would be a desirable goal.

Q. That would be the economical way to make it? A. Sure.

Q. The Jeoffroy device that came under the Graham 798 [631] patent had a cast hinged member, did it not? A. Why, I think so. I haven't examined it with that in mind, but I have no reason to doubt it.

Q. So there will be no question, Mr. Fishleigh, I show you Plaintiffs' Exhibit C. A. That appears to be such a member.

Q. A cast member? A. Yes.

Q. Deere & Company cast their members in both the 650 and 100 series spring clamps, do they not? A. In the present production, yes.

Q. Now, in the Graham 798 patent, tell us the position of the parts and the support of the shank with the tool out of the ground in traveling position. A. I would say it would be substantially as shown in—or as shown in Fig. 1 on Exhibit 21-A.

Q. And what would support the shank? A. Now, this is in 798?

Q. Yes, sir. A. The bolt 56, the loop 57.

Q. Now, if you would lower the frame relative to the wheels and place the structure in plowing position, starting the tools into the ground, what would be the relative position of the parts, particularly the supporting shank? [632] A. Well, if the ground was such, as it probably would be, that in that first operation the tool point didn't penetrate to any great degree, then it would tip the tool into some such position as shown in Fig. 6.

Q. And what would support the shank at that position? A. The bolts 56 and the loop 57, and of course the supporting—in all instances, even the preceding instance, I should have pointed out that those two would be ineffective except for the contact with the hinged member.

Q. You mean the loop in that position would be ineffective? A. Well, if you didn't have—if you just had those two, as you indicated here the other day, out in thin air by themselves, they wouldn't be supporting anything. But the reason, in my first statement relative to Fig. 1, I said that the tool would be supported by the bolts 56 and the loop 57, but of course I should have gone further and said by means of them the shank is clamped to the plate portion of the hinged member, and the same thing is true when it is in the position shown in Fig. 6.

Q. Now, in the position shown in Fig. 6 there has been some force exerted upwardly and rearwardly on the shank, and that force has tended to compress the spring? A. That is correct.

[633] Q. Spring bolt? A. That is correct.

Q. So this force on the shank is tending to force it up against the part of the hinged member above the red shank right at the rear of the hinge member? A. Well, it is putting stress there. If it is in the position as indicated in the patent there is no opportunity for any movement, but there is a force applied, of course, against the plate to the hinge member.

Q. In that position the shank is being pushed away from the bar of the loop number 57? A. Only if there is clearance there, which is not indicated in the Graham 798 patent, but to whatever extent there is clearance under that condition it would be pushed up against the plate, held against the plate, and slightly away from 57.

Q. And with a cast part you would have clearance for the shank, would you not, through that loop? A. Well, if I had a cast part which I was making for production I probably would, because I wouldn't be concerned about the functioning as set forth here in the patent. But if I were actually making a clamp to function as set forth in this patent, then I would see to it that there was no clearance there. Otherwise [634] I would appreciate that I was not functioning as specifically called for in this patent.

Q. Then you would go contrary to the recognized economy of quantity manufacture of such device? A. What I probably would do would be go contrary to this patent if I were going to manufacture on a production basis. But you are asking me in connection with this patent.

Q. Now, in that position the bolt at the forward end holds the shank against the plate of the hinge member, does it not? A. Yes, it does that in all positions.

Q. And that contact would be continuous? A. Which contact?

Q. Between the plate and the hinge member. A. At the front end only?

Q. Yes, sir. A. Yes.

Q. It would be constant? A. Yes.

Q. Now, if we had the plow tool in the ground and were plowing and the tool strikes a rock in the ground, what would be the action in the Graham 798 structure? A. Well, the point of the tool would tend to move back and up relative to the plow. That is, the point of the [635] tool actually would probably stay fairly stationary as far as forward and back is concerned, depending on the nature of the obstruction that was hit, or it might slide up and forward relative to the earth. But relative to the plow frame it would move upwardly and backwardly.

Q. And if the plow were traveling about six miles per hour and the rock were buried so it was immovable, the shock on that shank would be substantial, wouldn't it? A. Yes, sir.

Q. It would tend to bend the shank, would it not? A. Well, that would depend upon—there might be a tendency to bend the shank. It would depend in some extent on the stress or the force of the springs and the actual condition as to whether the point was free to move up over an obstruction or was actually held there. But there could be such a circumstance in which there would be a tendency, at least, to bend the shank.

Q. Not necessarily beyond its elastic limit? A. Well, that again—whether or not it was a little bit or a big bit would depend on the particular situation.

Q. Actually that shank could bend or flex clear up under the plate to the bolt at the front end of the hinge member, couldn't it? A. Are we talking now about some production job I have [636] seen or one which I made up in accordance with or tried to make up in accordance with 798?

Q. Talking about some production job that would be made by anyone wanting to make such a device in quantities to sell on the market. A. Well, there might be a tendency to bend, but I think in fact it would be a negligible actual bending, that is, in the section between the two ends of the plate member.

Q. But there would be a tendency to bend or flex in that way? A. Oh, a tendency, but not a bending of any consequence, and in some instances not at all.

Q. When you say not of any consequence do you have anything in mind as to what would be of any consequence? A. Well, I would say that if there was a deflection of a few thousandths of an inch it would certainly be of no consequence. No one in operating them would know the difference under any circumstances.

Q. Of course it might make a difference in the stress in the shank of the plow, in its distribution? A. I don't believe that that amount would affect it in any way that one could detect even on an extended proving ground test.

Q. You recognize that a slight movement with a force can [637] materially reduce the effect of the shock, do you not? A. Well, we have got a tremendous amount of length of the shank which takes up that shock, absorbs part of it, and then we have springs in there that take it up. So that I am quite confident that the difference of any bending which might tend to occur there would be negligible.

Q. The movement the Ford Motor Company put in the front wheels of their car which moves horizontally in case of shock would be inconsequential as far as we are concerned?

Mr. Morris: Comparing some unknown structure not in the ordinary course seems to me totally irrelevant here. What movement there might be in some other product has no bearing on the movement that might be present in the patented structure or any accused structures, doesn't tend to prove anything.

Mr. Gold: If Your Honor please, I think it is well known that in any place where there are impacts or shocks a slight movement can materially reduce the force, like a boxer slightly moving his head to avoid or reduce the effect of a blow. This man doesn't seem to want to—

The Court: I think it is proper cross-examination. The witness is qualified as an expert. [638] The Court takes into consideration that there are no other devices in evidence such as mentioned. I think I realize the principle involved, the question to the witness concerning it.

Mr. Gold: In the Mercury and Ford products it was well publicized in '60 about the little bit of movement to reduce shock. I am sure Mr. Fishleigh would keep up with some improvements like that.

A. In answer to your question, in the first place, I am not familiar with the detail of any of that movement as to how much it actually is. There is no question that if you have two otherwise rigid bodies coming in contact, you have a shock, that a degree of movement could reduce the amount of shock. But what I am saying here is that when you have a structure which has built into it a coil spring arrangement in the first place to take care of the shock, plus the resiliency of the shank itself, that is the device that you are working with, which is a resilient member and absorbs those stresses in its own bending, that any movement or bending which might occur in the place that we are talking about, and particularly which could possibly occur if it were built in accordance with this 798 patent, I still say would be inconsequential and negligible, that is, that the actual tendency to move is so small as to [639] perhaps not be inhibited by devices—even in any device as built in accordance with this degree of clearance.

Q. Now, with the force acting on the shank upwardly and rearwardly in Fig. 6, there would be a tendency for the shank below the plate to move away from the plate, in other words, bend downwardly, is that right? A. Well, there might be what you call a tendency. In fact, I don't believe that it would move to any appreciable extent, and if it—

Q. I am talking about the forces and the tendency now, Mr. Fishleigh, will you stick with my question? A. All right, and if it were built in accordance with 798 it could not so move.

Q. That would be where you would have a machined opening through the loop? A. No, I am talking merely about the provision in the patent which says that they must be kept in constant continuous contact. If they do move away, then they are no longer in constant continuous contact.

Q. If the shank moved away under the plate here it would still be in constant continuous contact with the bolt portion, would it not? A. One part of it would be, yes.

Q. So we would still have the constant and continuous contact at the forward end of the shank and plate? [640] A. Oh, at that end, but not the sort of constant continuous contact that is spelled out in the mechanical elements of the claims.

Q. According to your interpretation? A. Oh, I think on that there could be little question. I think some things are matters of difference of opinion; that one I think no reasonable opinion could be to the contrary.

Q. Now, with that tendency to bend under the plate, you could say that there would be a tendency to bend or flex through the entire length of the shank, is that right? A. Oh, I think there might be a tendency to do so. That is, there would be a force which, if the device were weak enough, might tend to bend it.

Q. Did you make an independent search of the prior art? A. No, sir.

Q. Actually it had already been searched thoroughly by Deere's patent department, hadn't it? A. I don't know anything about that.

Q. You just took the prior art that they told you about in your study of this case? A. Yes, I took the prior art which had been set up by the defendant in their answer or notices, or something or other.

[641] Q. Now I have placed the chart, Defendant's Exhibit 11, on the easel. Will you look at the illustration of Dunbar Patent No. 211,003. That is a harrow tooth, is it not? A. Yes.

Q. That is the harrow tooth mounting so that the tooth can be adjustable as to depth, isn't that right? A. Well, that is one thing that can be done, yes.

Q. The patent provides for that? A. Yes.

Q. Now, you have some elements that you have listed in a box just to the right of the Dunbar illustration. The wording for those elements, that is your own words, is it not? A. Yes.

Q. The dark green member in Dunbar is a shackle plate "D", is it not? A. That is the nomenclature in the Dunbar patent, yes.

Q. And as far as there being a shank for a groundworking tool, that is the tool itself, isn't it, the member "F"? A. Well, let's say an integral tool and shank in this instance, but it clearly in my opinion is a tool and shank.

Q. Dunbar describes it as a tooth? [642] A. Yes.

Q. Now, there can't be any flexing in the portion of that tooth above that shackle member, can there? A. Well, at least above the spring member I don't believe there would be any tendency for it.

Q. So any flexing would have to be below the shackle? A. Well, it would have to be between the top point of contact with the spring member and the bottom of the tooth.

Q. It would have to be where, Mr. Fishleigh? A. Well, certainly between the top of the contact between the tooth and the spring member and possibly, depending upon the direction, between the top of the shackle member or hinged member and the bottom of the tooth.

Q. And that would be up here at this point where I am pointing? Actually on your drawings or on this chart about a quarter of an inch above the dark green member? A. There certainly would be no tendency above that point.

Q. And your testimony is it could flex in the shackle part itself? A. You didn't ask me if it could flex, you asked me if there was a tendency to flex, or could be a tendency to flex, and I believe that under some circumstances there could be a tendency to flex between the top certainly of the hinged member or shackle bar and the [643] bottom of the tooth anywhere along there.

Q. And do you think it would flex in the shackle member? A. I don't believe that if properly tightened there would be any substantial flexing in that point.

Q. If it started to flexing it would tend to work loose, wouldn't it? A. Oh, that depends on how much there is and how the device was set up. If any substantial flexing in there occurred I think it would tend to work loose and would probably be loose. I don't think it is desirable.

Q. All that holds that tooth in place is the friction due to the clamping action between the spring and the shank and the shank and the shackle member "D", isn't that right? A. That is correct.

Q. If any looseness occurred the height or rather the depth that you could plow or harrow would be altered, wouldn't it? A. Well, if there was sufficient looseness so that the forces which were encountered would pull the tooth down, then of course the adjustment would be changed, or push it up, either one.

Q. It would be rather difficult to have forces in harrowing to pull the tooth down, wouldn't it? [644] A. Well, that is one of the things that I had in mind in saying that it wouldn't necessarily follow that any slight looseness would alter the position, but it might.

Q. The Dunbar structure doesn't look much like the Graham 798 structure, does it? A. You mean just in casual outward appearance?

Q. Yes. A. I wouldn't say that it just as a picture looks much like it. If I was thinking of it in terms of structural and functional features as an engineer I would see some decided resemblances. But just to look at it as a picture it would be different.

Q. And it doesn't look like either of the accused devices, does it? A. No, just as a picture, no.

Q. There is no coil spring in the Dunbar in the manner specified in the Graham 798 patent, is there? A. No, no coil spring in the sense of a spirally wound coil spring.

Q. You have never seen a Dunbar device in actual use, have you? A. Oh, I don't recall having seen one that I now recognize as such.

Q. You can't read either one of the Graham 798 claims on the Dunbar disclosure, can you? [645] A. You mean find a response for the mechanical elements in toto?

Q. Yes, sir. A. No, not literally.

Q. You could read it in some other manner? A. Not all of them. Certain ones I think quite certainly the elements are quite similar, but not all of them.

Q. Dunbar has a spring? A. Yes.

Q. Now, if you will look at the Cobb disclosure, I believe that is about in the middle at the bottom of the exhibit, Defendant's Exhibit 11, that patent also discloses the mounting of the harrow tooth, doesn't it? A. Discloses what?

Q. The mounting of a harrow tooth. A. Yes.

Q. You have used rather loose designations as to the parts in your statement of what that patent discloses, haven't you? A. Well, I don't know that I have. Loose as compared to what?

Q. As compared to what was actually disclosed in it. A Well, I don't believe so. I thought I was giving a reasonably accurate description of it, but if there is any place that you know of that I misspoke or improperly [646] spoke I would be glad to correct it.

Q. Now, I believe the Cobb patent describes the device designated with "a" as a bail, does it not? A. I believe it does.

Q. And that is fastened to a beam that is designated "B"? A. That is correct.

Q. And the member "D" that you color a dark green is pivoted on that bail? A. Yes.

Q. But you show the bail as a fixed member colored yellow, isn't that right? A. Yes.

Q. How did you determine your designation of the separate parts? A. My coloring of them?

Q. Well, in determining whether or not they were fixed members and movable members. A. Well, partially by observation of Fig. 1 where it shows the structure in its two extreme positions of movement, and as I see it there it shows that the member "D" and the tooth and its shank "P", and the spring "c", all move, but in the course of that, at least as shown in this figure, the part "a" does not move.

Q. You actually took a broad designation of parts of the [647] Graham 798 structure, then selected some part that could be called by that designation in the various prior art on Defendants' Exhibit 11, did you not? A. Well, the first part I think is correct, and the latter part is that where I found a part which functioned in accordance with the functioning, broad functioning of the part as I had designated, I applied it.

Q. Now, in Cobb is the fixed part between the hinged member and the frame? A. I would say, I think, yes, generally. Of course the pivoted part goes around the fixed member, just as it does in many other situations, so that part at the lower end of the structure, I would have to say that a portion of the hinged member is between a portion of the fixed member and the frame.

Q. And there is no pivot pin as such shown in Cobb, is there? A. No separate pivot pin. The pivot pin or the pivoting member is an integral part of the bail or fixed part "a", no removable separate piece.

Q. Now. when you were looking at the Graham 798 patent awhile ago you said it had to be limited to a very specific structure, with practically no tolerance in that loop portion. Now you are taking a much broader look at this prior art of Cobb. aren't you? [648] A. Well, yes, I am simply—those elements do not purport to have—that is. that appear on this Defendants' Exhibit 11—do not purport to have all of the restrictions or limitations that are imposed on similar elements in 798. You are talking about them from a broader standpoint.

Q. Now. Cobb doesn't show any coil spring like Graham 798, does it? A. No, no coil spring. Shows a looped spring.

Q. Now, in that shank for the ground working tool again that is just the harrow tooth that the top shows, isn't it? A. That is right.

Q. The Cobb structure would have a rather limited swinging movement when it hit an obstruction, wouldn't it? A. Oh, I am of the opinion that most any of these have somewhat limited swinging movement.

Q. Of course you have scaled patent drawings in the past to see how much they move or what size some part should be, haven't you? A. Well, the only time I have done that is when I am making a model of the device and even understanding that the patent drawings are not intended to be to scale, I normally try to follow the scale so as to avoid any criticism of having departed from it. But [649] normally they are not accurately to scale.

Q. The type spring in Cobb would tend to prevent the swinging of the tooth, would it not? A. I don't believe as much actually as the type of spring in 798. It is a coil spring, has a very definite bottoming position, and in this instance, this type of spring could swing, if properly constructed, to much greater degree than shown by the dotted or dashed line position in Fig. 1.

Q. And what would be the force characteristics of a spring such as Cobb as compared to a force characteristic of a coil spring? A. Well, the coil spring builds up its force as it is compressed in much greater degree, I believe, than a spring of this Cobb type would.

Q. A coil spring is more or less what you might call a straight line function, for each inch of compression you are going to add so much unit pounds? A. Yes, more or less, in its normal operating range that is intended to be.

Q. If you put on a hundred pounds to compress it one inch, then 200 pounds would compress it two inches? A. That is the general idea in the general range, in its operating range.

Q. Did you ever see a harrow having a structure disclosed [650] as the Cobb patent in actual use? A. I don't believe that I have, no, sir.

Q. I believe you described the operation of the Cobb structure. Is that operation set forth in the Cobb patent? A. Well, not in great detail but is illustrated in Fig. 1.

Q. You say not in great detail. The description you gave of the operation isn't in there at all, is it? A. Well, no, it doesn't specifically say that. That is, he leaves most of that for a general understanding, even as of that date. He says his invention "consists in certain combinations of improved parts in that class of harrows which are provided with hinged spring-actutated shares." And then over at the other—in column 2, beginning in line 51, "A more prompt and unvarying spring action is thus obtained, as a better purchase is exerted on the spring thus located and secured in position to be contracted. Such a construction and combination of simple parts greatly facilitates the construction and operation of this class of harrows." And he shows it moving from one position to another, and even in 1883 I believe it would have been understood by a mechanic that it varied under varying conditions of load.

Q. And the only actual disclosure of any operation is in [651] Fig. 1 from the solid line to the dotted lines of the shank and spring.

Q. Now, will you describe the application of forces in harrowing operation on the Cobb structure. A. Well, under normal operation there would be a rearward—that is, with respect to the frame, a rearward force on the tooth of the harrow.

Q. On Defendants' Exhibit 11 that would be a force at the lower end of the tooth "P", which would be to our right? A. Yes, and to some extent in normal work, a downward force, if it were encountered, moderately heavy soil.

Q. That would be the suction? A. It would be similar to what causes suction and the resulting penetration.

Q. Of course in harrowing we are not too concerned about suction, we are merely trying to break up the clods aren't we? A. Oh, at least in harrowing that I did as a youngster, when we were loosening the soil and breaking up lumps as well, but we were also penetrating at least or desirous of penetrating at least to the two or three or even four inches that I have heard mentioned here.

Q. That would be previously plowed ground? A. Generally speaking, yes. At least not land that had [652] never been plowed. I never used a harrow for new land, but I have used them at times when it hadn't been plowed just recently.

Q. Now, this force that is going to be occurring on this tooth during harrowing operations, that would apply a rearward force on the upper part of the tooth toward the loop designated—or the bar of the loop designated with the letter "v"? A. That is correct.

Q. Actually maybe I had better not say that is designated the letter "v" because in the patent I believe the letter "v" designates the opening through that lower part of that hinge member. Is that right? A. If you found it, where did you find it? I don't seem to be able to put my finger on it.

Q. Right here (indicating). A. Yes, "closes the open side of the hook or recess v."

Q. So we will understand what we are talking about, I am referring to that part of the loop that is on the right-hand side of the tooth in the illustration that you have in Defendants' Exhibit 11. Now, the force in the harrowing operation is toward that loop bar, isn't it? A. Well, in the normal operation there would be a force [653] tending to push the—or pull, rather, the shank part of the tooth against that member.

Q. Now, that would be at the lower end of what you have designated a shank attaching member in your dark green color? A. Yes.

Q. That is just opposite to the direction of the force we talked about that would be applied to the Graham 798 structure in plowing operations, isn't it? A. Well, opposite in what respect? As far as the shank is concerned it is exactly the same. Opposite in what respect?

Q. So there will be no misunderstanding, Mr. Fishleigh, we will go back over it. We were talking about Fig. 6 in Defendants' Exhibit 21-C and the force in plowing would be upward and rearward on the shank and that force would be toward the plate portion of the shank attaching member or hinge member away from the loop, isn't that right? A. Yes.

Q. Now, in the Cobb patent the force applied to the shank is toward the bar of the loop and away from the plate portion of the shank attaching member? A. The force of the shank is exactly the same, but because of the difference in position of the hinged member [654] relative to the shank, it is toward the loop in the one instance and away from the loop in the other.

Q. Now then. there would be a tendency in Cobb for the tooth to bend right below the loop portion of this dark green member, is that right? A. Well, not necessarily limited there. That is, there is a tendency for that shank to bend at all points from its bottom up to the bolt, a tendency for it to do so.

Q. How much tendency would there be in the portion above the loop? A. Well, in my opinion not a great deal. I would say other things being equal, if the parts were of the same size and length, about the same tendency as would be in one of the 798 if it were made in accordance with commercial practice.

Q. This tooth of Cobb is resilient to some extent, is it not? A. Yes, intended to be.

Q. Then when your force is applied in the harrowing operation that tends to force the tooth against the bar of the loop? A. Yes.

Q. And that tends to make a fulcrum point for that harrow, doesn't it, that harrow tooth? [655] A. Yes, just like the rear end of the hinged member makes a fulcrum point under those circumstances in Graham.

Q. Then when that tends to fulcrum about that point, then there is a tendency to force the part above that loop in Cobb, the Cobb tooth, against or flat against that plate portion, isn't that right? A. Well, not exactly right, no, because under certain circumstances the amount of flexing that would tend to occur between the loop and the bolt I am confident would be of a nature which would not exceed the clearance which existed there, so it would not be restricted by the plate member.

Q. How much clearance would we have in the Cobb group? A. Well, we would undoubtedly have about the same amount as we would have in a commercially built structure if one were built of the Graham setup. A matter in excess of what I would expect the flexing of the shank to be between those two points.

Q. Is it your testimony that due to the positioning of the parts in Cobb that the forces acting on the tooth would not tend to bend or flatten the upper portion above the loop against the plate, the flat plate "D"? A. Oh, I didn't say they wouldn't tend to do it, that the forces wouldn't tend to do it. I am saying the amount [656] of flexure would not, in my opinion, be restricted by the presence of the flat plate, that is, that you start at the bolt and the very little flexure that occurs there would carry down to the stirrup member and then on down below it.

Q. Then do I understand it is your testimony that the flexure in the part of the tooth above the loop in the Cobb member, the dark green member, would be the same as it would be in the Graham 798? A. I think substantially so, assuming they were built of the same size.

Q. It would be the same character of flexure? A. The same character.

Q. We are agreed, however, that the direction of the force relative to that plate portion is different? A. Yes. The direction of the force relative to the shank is the same in each case, but the plate is on one side in one case and the other side in the other, so that naturally there is a reversal of direction as regards the plate portion.

Q. And considering the plate in Cobb is just the reverse of the direction of the forces as in Graham 798? A. That is right. In other words, the reaction to the force in the shank is taken by the plate portion of the hinged member in 798 under that particular circumstance, [657] and it is taken by the stirrup member in the Cobb structure, that is, the particular force we are talking about in a rearward and upward direction such as might be encountered when an obstruction was hit.

Q. You have never seen a device like the Cobb disclosure in actual use, have you? A. Not that I knew to be exactly like that, no, sir.

Q. So you can't tell us exactly how it would operate except for what is in the specifications? A. Well, coupled with what is showing in the drawings and specifications mean to me, as any other drawings that I see, and description, and having operated with mechanical structure of this and far more complicated type over many years.

Q. And the Cobb structure doesn't look like the Graham 798 device nor does it look like the accused device, does it? A. As a picture, no.

Q. I believe that you have the Rix illustration on Defendants' Exhibit 11. That is Patent No. 287,965. It is just to the right of your terminology or list of parts, isn't that right? A. Yes.

Q. Mr. Fishleigh, that structure of Rix is very similar to Cobb, isn't it? [658] A. Well, it has some similarities. It differs in about as many respects as it is similar, I guess.

Q. Would you tell us some of the differences. A. Yes. There is quite a difference in the spring arrangement, quite a difference in the stop arrangement, quite a difference in the attachment of the hinged member to the frame by way of fixed member.

Q. In other words, there is quite a bit of difference between those two structures, isn't there? A. In detail, yes.

Q. Now, tell us about that fixed member in the Rix patent. I believe you said it was designated with a small letter "t". A. Well, I believe I did say that. Actually, as I check it further, that designation, the letters "t" refer to the ears on the hinged member.

Q. What Rix calls hinging eyes on the hinge supporting bar "c", isn't that what Rix says? A. Yes. What I had reference to, and it doesn't carry a very clear number, up in Fig. 1 the lead line from "n" seems to run to the portion which provides the support for the pivot pin "n".

Q. And does Rix give that a number or a letter? A. If so I haven't been able to tie it in.

Q. He doesn't even tell what kind of structure he has [659] for his fixed member then, which you have designated yellow, does he? A. That is right.

Q. I believe you said that the loop in Rix had the same function as the loop of Graham 798, is that right? A. I said what? Which loop?

Mr. Gold: Will you read the question back, please.

(Question read.)

A. Well, I think the device which is called a loop "v" in Rix does function substantially like the portion 57 in Graham 798.

Q. Now, tell us about the function of the loop in the Rix patent. A. Well, that loop surrounds the shank and helps to support it upon the hinged member. Now, to the extent of cooperating with the bolt to necessarily hold the shank and the hinged member in constant continuous contact throughout their length, there is no indication of that requirement in Rix. As a matter of fact, there isn't any in anything else that I know of except 798. But it does provide a structure surrounding the shank and helping to hold it in position.

Q. You said constant continuous contact throughout its length. Did you find that in the Graham 798? [660] A. Yes, I think that is what it means when I read the element of the claim and read the file wrapper where it is talking about it, I think there is no question in my mind about it.

Q. But you didn't find that it said throughout its length in the claim? A. Oh, in the claim it says—

Q. I assume you are referring to Claim 2? A. Well, that is where I am referring now, where it says that "The bolt cooperates with the shank embracing means in maintaining the upper face of the shank in constant continuous contact with the under face of said plate portion." I don't find that it says a small part of the upper face in contact with a small part of the under face. It says maintains the upper face in contact with the under face, and to me that means just the one thing.

Q. It actually doesn't specify any particular extent at all, does it? A. No, it doesn't certainly say that a small portion of it will do. It just says the two faces, one face here and another face here (indicating), come together.

Q. Now, you say that this loop in Rix is to cooperate with the bolt to hold the tooth in place? A. Yes.

[661] Q. That is another harrow tooth, isn't it? A. Yes.

Q. Rix says that the structure shown in Fig. 2 is not very good, doesn't he? A. Oh, not as to what we are talking about. He is talking about the particular form of the tooth. He has got an improved tooth form as shown in Fig. 1, but that doesn't affect the hinging action as we see it.

Q. The force in harrowing, looking at Fig. 1, would be to the right and upwardly in the illustration shown in Defendants' Exhibit 11, is that right? A. Well, the force would be pretty much to the right, which would tend to move the point of the tool up and to the right.

Q. And that would be a force on this tooth that would be in the direction toward the bar of the loop on this dark green member? A. Yes, the loop "v".

Q. Or that portion that you have colored light green? A. Yes.

Q. On the dark green member? A. That is correct.

Q. Of course that bar or loop portion is integral with the plate portion of that member, is it not? A. Yes.
[662] Q. They are all one piece? A. Yes.

Q. Now, that force in Rix in the harrowing operation is exactly like we discussed in Cobb, isn't it? A. Yes.

Q. It is toward the loop and away from the plate? A. That is right.

Q. And just the reverse of what is the direction, relative direction in the Graham 798? A. Relative to the plate, which happens to be put on the other side. But of course on the tooth and the action of the tooth as such is the same.

Q. Now, is the Rix structure arranged so that the harrow tooth can be adjusted for depth work? A. Yes.

Q. Is that stated in the specification? A. I am not sure about that. My recollection is not, but I could be wrong, if you have the spot. But in any event a second hole is shown.

Q. That is the second hole right above your pink member in Fig. 3? A. That is right. It is not numbered, however.

Q. And so you assume that that would receive the bolt so that the shank or tooth could be moved up? A. I think there is that possibility. I gather that that [663] is what is intended.

Q. And the sharp bend part of the tooth is placed through that loop far enough that that adjustment could be made? A. Oh, I believe so. I haven't scaled it on this drawing, and that wouldn't necessarily indicate anyway, but I believe that it is.

Q. Now, when you are harrowing with this structure there would be some bending in response to forces acting on this tooth, would there not? A. Yes, tendency at least to bend.

Q. That is true of harrow teeth, they have some flexibility that will bend under the load? A. Well, now are we talking about the part down below or—well, what you call the sharp bend, or the part up between the bolt and the loop "v"?

Q. If there is a difference you tell us about it. A. Well, as to the part down below, there is clearly a tendency to bend, although in the form shown in Fig. 1 there wouldn't be nearly as much tendency to bend as in the other because it is reinforced with corrugation. But up above there would be some tendency, but very little, if any, actual bending.

Q. In the form shown in Fig. 2 it looks like it is more or less a flat section and that could have some bending? [664] A. Yes.

Q. But in the form shown in Fig. 1 there is a "V" shape towards the lower end of the tooth, that would tend to make it quite rigid? A. That portion of it would tend to be rigid.

Q. But we would have even in that one some tendency to bend in the forces above that "V" portion of the tooth? A. Yes, sir.

Q. Now, with the force applied toward the loop, would the bending forces on the tooth cause it to tend to have the loop be the fulcrum? A. Oh, yes.

Q. And that would cause a corresponding action that would tend to move the part of the tooth above the loop toward the plate portion of the dark green member? A. Oh, I think there would be such a tendency, but a negligible amount of actual movement or bending.

Q. It would tend to hold it tight against it, wouldn't it? A. Oh, I don't know that it would tend to held it tight at all, depending largely on the amount of clearance. If there was in that loop as much as a—well, a relatively small amount, although the tendency would be to move toward the plate the actual movement probably would not be a movement toward the plate. The whole thing would be a movement away from the plate, as [665] distinguished from its normal position.

Q. This tooth would tend to be like a lever arm, with the force acting on the end of it? A. Well, to some extent, yes.

Q. And when we have a fulcrum like this loop portion, so we would have part of our arm on both sides, then you have movements of force acting on that lever, don't you? A. That is right.

Q. The length of your lever arm is the movement of force? A. That is right.

Q. So the force that you have acting down here on the end of this tooth times the length of the tooth would equal the length of the other arm above the fulcrum and the force that would be, in that case, toward the plate of the dark green member, is that right? A. Well, that is certainly true up at the bolt at the end of that shank member.

Q. And there would be some forces acting throughout the length of that part of the lever arm? A. Some forces tending to bend perhaps, but not necessarily any force actually in any contact with or forces between the shank and the plate throughout that space or any tendency to bend beyond contact with the plate.

Q. It would actually maintain the contact, good tight [666] contact there. wouldn't it, so there wouldn't be any bending of the shank in that particular— A. I would expect it would maintain good tight contact at the bolt and it would be bent away enough to make contact with the loop and that you would probably have a curve in part at least away from the plate as between the two.

Q. That is assuming that there would be clearance in there, in the loop? A. Yes.

Q. Substantial clearance? A. No, relatively moderate amount of clearance, and even in the absence of—well, if it were only a very few thousandths, depending on the size, and if we were talking about structures such as we have here it would be a negligible amount of bending.

Q. I believe Rix said that the structure shown in Fig. 2 would hang up on roots? A. Oh, I think he said it would, yes.

Q. Of course Rix shows a curved spring bolt, does he not?

Mr. Morris: I think he is trying to find the answer to your preceding question, Mr. Gold.

Mr. Gold: I am sorry, I thought he had said he thought it did.

A. Well, perhaps I went too far. What he actually says is [667] that—

Q. (By Mr. Gold) If you will read in the second column, Mr. Fishleigh, starting about line 58, doesn't it say, "When the harrow in each figure is moved on ahead, the tooth in Fig. 2 will hang to the root x, while the tooth in Fig. 1 will continue to swing up until the working end is met"? A. Yes, he does. Up above he says that the structure will "swing back and upward quicker and farther during a given movement of the harrow than a tooth having a like bow, Fig. 2, without the improvement in Fig. 2," so he thinks that it would clear the obstruction quicker and better.

Q. And he shows in Fig. 1 it would swing up until it is limited by engagement of that dark green member with the beam, isn't that right? A. Well, I don't think he shows it in contact with the beam but closer to it than in Fig. 2.

Q. Would that beam be a limit of its movement? A. Yes, as shown here that would be as far as it could go.

Q. Now, that spring bolt, I asked you if Rix didn't show a curved spring bolt. I don't believe you answered that. A. I was looking for the other at the time. The answer is yes.

[668] Q. That bolt has a nut designated as "e" that serves as a stop, is that right? A. That is right.

Q. There is no face on either the tooth or the plate "c" that is normally in contact with the frame member or the fixed member, is that right? A. That is correct.

* * *

Q. (By Mr. Gold) You have never seen a structure such as shown in the Rix patent in operation, have you? A. Not precisely, no.

Q. In the structure shown in Fig. 1 under load hitting a root, or something of that nature, wouldn't the major tendency to bend be right below the loop portion, bend of the shank? A. Well, that would depend upon the relative forces, the spring and the relative flexibility. I would expect [669] it might be at what you have called the sharp bend, it would be in a place that starts at around there. But it would depend entirely on the relative forces as between the spring and the flexibility of the shaft and the amount of the load.

Q. You would consider that sharp bend rather poor structure, wouldn't you? A. I wouldn't use it in certain instances, but I don't have any great quarrel with it in a structure of this sort.

Q. It tends to provide a high stress area, doesn't it? A. Oh, it tends to.

Q. And of course the Rix structure doesn't look much like the Graham 798 or the accused device either one, does it? A. As a picture they don't look a great deal alike. Looking at it from the standpoint of a functional picture they have some similarities.

Q. I believe on the Defendants' Exhibit 11 you have some drawings of the Graham 811 patent. They are immediately below the square that you have with your designation of parts, is that right? A. That is correct.

* * *

[670] (Noon Recess.)

[671] AFTERNOON SESSION, TUESDAY, MAY 8, 1962

CLARENCE T. FISHLEIGH resumed the stand and testified further as follows:

Cross-Examination (Continued).

* * *

Q. (By Mr. Gold) I believe you stated that the Graham 811 structure appeared to be different from Dunbar, Cobb and Rix, in that it was turned 90 degrees from the position of those other three, is that right? [672] A. Well, I think that is the fact. I don't recall whether I said so or not, but the hinged member in its normal position is in a horizontal position, yes.

* * *

Q. (By Mr. Gold) In the 811 structure, the shank was between the fulcrum plate and the hinge member, is that right? A. May I have that again.

(Question read.)

Mr. Morris: You don't really mean that, do you, Mr. Gold, between the fulcrum plate and the hinged member?

[673] Q. (By Mr. Gold) I am sorry. The fixed member. A. That is what I was confused about. Between the fulcrum plate and the fixed member?

Q. Yes. A. Yes.

Q. And in your direct examination you called that plate number 63 a fulcrum plate because you recognized it had particular functions as a fulcrum plate? A. Well, I think that was true in part, because that is what the patent called it and I thought that was an apt description.

Q. The Glencoe structure also has the shank between the plate member and the fixed member, isn't that right? A. Well, it has it between those members in the sense, for instance, that one might say Kansas City is between Chicago and Denver, in that broad sense. But in the sense of being held between and in contact with, then it is not.

Q. There is no question in your mind that the 811 structure had flexibility the entire length of the shank, didn't it? A. Well, it was resilient so that if sufficient forces were applied and quite heavy forces, that there could be some flexing if the forces were sufficient. Whether or not it actually did flex throughout the entire [674] length there is some question.

Q. It was a rather loose assembly so that there wasn't anything to keep it from flexing, was there? A. Well, that is correct, except the relatively short length between the fulcrum point and the connection or holding point at the spring.

Q. It was such a strange device that you were even surprised it even worked, weren't you? A. Well, I don't know that that is so. It certainly was not the type of device that I would recommend anyone designing that way, and as far as mere working or operability I don't recall ever having said that I didn't think it would operate at all. I didn't feel that it was particularly practical and what I have seen in the field tends to substantiate that.

Q. Do you know that over 500,000 of those clamps have been sold? A. Well, I don't know it but I don't doubt it. But that doesn't affect my view on it in the least.

Q. Now then, I believe that the upper right-hand corner of the Defendants' Exhibit 11 is a drawing of the Jeoffroy SC-580 device, isn't that right? A. Yes.

Q. That drawing has numbers on the various parts but there was no patent issued to Jeoffroy on that structure, [675] was there? A. Not that I know of, no.

Q. Those numbers and leader lines were some that you merely applied to the drawing? A. That is correct.

Q. The Jeoffroy has longitudinal movement of the shank relative to the fulcrum plate, does it not? A. It may have.

Q. Between the fulcrum plate and the fixed member? A. Yes, sir.

Q. There are no bolts holding the shank in place on the fulcrum plate? A. No, no bolts between the shank and the fulcrum plate.

Q. It has the same relationship of parts and the same operation as the Graham 811 device, doesn't it? A. May I have that again?

(Question read.)

A. Well, only in part. To some extent it does, but it doesn't have the load being carried by the spring bolts as in the 811 structure, for example. It doesn't have the open pivot groove in the fulcrum plate that the 811 has. There are those things at a glance. But to the extent the shank is between the fulcrum plate and the fixed member and to the extent that the shank floats in that position there is some degree of [676] similarity.

Q. Jeoffroy has a nib and hole arrangement or socket to keep the shank from being pulled out? A. Yes, both between the fulcrum and the shank and between the shank and the fixed member.

Q. In other words, the nib and socket would perform the function of holding the shank in place instead of the spring bolt in the particular illustration of the Graham 811? A. Well, it would tend to under most conditions hold the shank in place. As was brought out, I think, here the other day, there are conditions in which it might not hold where the 811 would, and of course there is a complete absence of the detrimental effect of the load on the spring bolts.

Q. And the shank would tend to pivot about the rear of the fixed member? A. Yes.

Q. And the plate would pivot about its pin, the pivot pin? A. Yes.

Q. Two different pivots? A. The fulcrum plate?

Q. Yes. A. Yes.

Q. It has two different pivots then for the shank and the [677] pivot plate? A. That is correct, if we really call the contact between the shank and the fixed member a pivot. It is more of a rocking action than it is a true pivotal action, but there is that difference.

Q. They would move about two different axes then? A. Well, yes. The movement of the shank in my judgment is not a true pivotal movement, whereas the movement of the plate would be.

Q. Of course the Jeoffroy SC-580 shows two springs where the Graham 811 patent showed only one spring? A. That is correct.

Q. And I believe that you have at the lower right-hand corner of Defendants' Exhibit 11 an illustration of the

Traeger—that is the Australian patent No. 111910? A. Yes.

Q. I believe you said that in that patent the shank is between the plate member and the fixed member? A. Yes, considering the portion 1 as the fixed member, that is correct.

Q. The Traeger device is actually a two piece tine, isn't it? A. Yes, sir.

Q. And there is no clamp shown in the drawings in the figure of the patent? [678] A. Well, yes, there is a spring clamp as between the two portions of the tine. There is no clamp shown for clamping the entire tine on the frame of the plow.

Q. No mounting shown at all for the tine on a frame? A. No.

Q. I believe that patent referred to the tine as being an S-shaped tine? A. I believe that is correct, yes, spring tine of the S type.

Q. And he also stated that those S-shaped tines tended to break? I believe if you will look in Column 2 of the first page that you will find it in the first full paragraph. A. Yes. Well, it says that there is a weakness at almost the center of the tine, "for whenever a tine breaks such breakage usually occurs at this point."

Q. And so Mr. Traeger put a pivot and made a 2-piece tine so it would pivot at the point it normally would have broken? A. Yes, he put a spring clamp to hold the two parts together.

Q. Then this part that you have colored yellow is actually a flexible member, is it not? A. That is correct. But as to the operation of the clamp it operates as a fixed member although it itself might [679] move under certain circumstances.

Q. Now, when you say it is a clamp, in what sense are you using the word clamp? A. Oh, I think in the sense that we have been using it throughout here, as a means of connecting two parts together with a degree of flexible movement as between resilient, flexible movement between them.

Q. And you are considering in all of your answers that broad terminology for the word clamp? A. Well, when we say nothing more than that, it may come down to have certain parts, and this one has many of the individual parts which narrow down the terminology in particular structures we are directly concerned with.

Q. Mr. Traeger didn't refer to it as a clamp, did he? A. No, he referred to it as a hinge, which would allow the rear part to swing upwardly against the influence of a spring or springs.

Q. When we referred to the fixed member in the Graham 798, that is a member that is held rigid to the frame, isn't it? A. That is correct.

Q. And in that sense the part you have colored yellow in Traeger would not be a rigid member? A. Well, it would not be identical to it, but of course even under those circumstances in any operation of the [680] plow the frame and the so-called fixed member do move, so that it is not an absolutely static situation, and the same way here. This upper portion of this tine moves in a somewhat perhaps different way. There is a spring action there and there is a movement of the main frame in a plow such as 798. They are not identical. I think I pointed that out in my direct examination.

Q. You aren't suggesting that the fixed member is supposed to move on the beam in the Graham 798, are you? A. No, I am suggesting that the beam and the fixed member do move relative to the earth as a plow is in operation.

Q. As it is pulled over the ground? A. Yes, surely.

Q. Traeger's device is for drills and combines, isn't it? A. Well, I think that is what he says. He says it is an improved spring tine for agricultural implements, and in particular it relates to spring tines of the "S" type, which are commonly used in drills and combines. But he says it is for agricultural implements.

Q. Those are the specific agricultural implements he has mentioned? A. Yes.

Q. We shouldn't go beyond what he specifies, should we, to avoid his application? [681] A. Well, perhaps not, but when he specifies agricultural implements and then merely suggests two in which they are most commonly used, certainly I would think that you could go to agricultural implements generally if you had occasion to.

Q. We should give it a broad interpretation in that respect? A. Well, only so broad as his language. I don't think that when he says agricultural implements and in effect says, for example, drills and combines, that that restricts it to only drills and combines.

Q. We don't know how that tine is fastened to the beam, if there is a beam, in the implement, do we? A. Well, shall we say that Traeger doesn't specifically point that out. I think that is probably an exaggeration to say that we don't know, as of that date, that one informed in this art would not know how it was fastened. But at least Traeger does not, did not apparently feel it necessary to explain that rather common detail.

Q. If we were going to follow the teachings of Traeger we would have to take these shanks and these devices that we have here, like the defendants' structure, cut them in two and then hinge the two pieces together, wouldn't we? [682] A. Well, if we were to slavishly follow it in each detail, that is correct.

Q. You can't read the claims of the Graham 798 patent on the Traeger disclosure, can you? A. I don't believe so, no.

Q. I don't believe I asked you—you can't read the Graham 798 claims on the 811 disclosure, can you? A. No, I think not.

Q. And it would also be true that you can't read them on the SC-580 structure? A. I believe that is correct.

Q. Traeger, Cobb, Rix and Dunbar all show simple pivoted teeth, don't they? A. Well, they show teeth. What do you mean by simple teeth?

Q. Just merely pivoted teeth, isn't that right? A. Well, they are teeth. I would hardly say, for instance, that Rix or for that matter Cobb, or for that matter Traeger, are what might be called simple teeth. They are single teeth, if that is what you mean, in some instances pivoted to the frame, in other instances pivoted between the parts of the tine or tooth, whichever you want to call it.

Q. Would you say that they have a simple pivot? A. They have a single pivot.

Q. Go to the Danish patent, Petersen, that is Patent No. [683] 57,391. I believe you have that at the lower left-hand corner there. A. That is correct.

Q. I believe that is for the "horse hoe"? A. That is what the translation calls it, yes, sir.

Q. Are you familiar with horse hoes? A. Well, I never ran onto that terminology, which clearly is a literal translation of the foreign language. But I believe I am familiar with the type of structure they are talking about. I would say a horse-drawn hoe or cultivator, harrow.

Q. This could be a harrow? A. It could be.

Q. Does the tooth engage the plate above the loop portion? A. I believe it does. Yes, the shank.

Q. Do you find that in the specification? A. I don't think I recall a specific mention of it.

Q. In the drawing you have on Defendants' Exhibit 11 it shows a dotted line that apparently is the face of the shank that would be toward the right of this drawing, in other words, toward the fixed member, we might say. Isn't that right? A. I don't so interpret it, no.

Q. There is a dotted line there, isn't there? A. That is right, it is a continuation of the full line [684] which we see up above the yellow fixed portion.

Q. I think you are looking at the wrong one, Mr. Fishleigh. I mean this dotted line here (indicating), that would be a continuation of the solid line of the shank leading over to the loop? A. Well, I do see that line, yes, and you say that would be what?

Q. That would be the shank. It is hidden behind the other parts in this drawing, the face of the shank? A. Yes, I believe it would be that.

Q. Now we have another dotted line, do we not, that is spaced in this drawing in Defendants' Exhibit 11 about one-eighth of an inch to the right? A. Yes, that is correct.

Q. And that is spaced then from the shank? A. Yes.

Q. Then the shank could be spaced away from that plate member at that point? A. Oh, I don't so construe it, and I bear that out by—if you look at the dotted line, which you say and which I agree does represent the right-hand side of the shank, you will see that that dotted line continues on beyond the end of the shank to the top end of the hinged member or fulcrum plate, and my interpretation of that is clearly that that represents a flat face against which [685] the shank is pressed.

Q. That is the way you construed it, but then there is nothing in the specification to say that, is there? A. I don't find specific language of it, but the drawing is quite clear to me. The other line which you refer to is clearly an extension of the full line above which is an outside line, an outside flange of the hinged member.

Q. But we should follow the specification to find out how these things are made, should we not? A. Well, if there is a conflict between the two, or something, but where you have some features of that kind which are shown quite clearly in the drawing, it is not necessary, in my opinion, that every little detail be spelled out in detail in the written portion.

Q. And you can use some variation in your interpretation, particularly to make one operative, can't you? A. Oh, I don't think it is a matter of variation in my interpretation, but I believe that one looks to the specification and the drawings to see what the parts are, and particularly when referring to parts which were not perhaps the basic parts that he was directly concerned with.

Q. Do you feel that that upper part of the shank would have to engage a flat surface in order for the structure [686] to be operative? A. Oh, I wouldn't say that it would have to, but I believe that it clearly shows it in that condition here.

Q. You think it would work even though it didn't engage the face there? A. Well, I don't think it would be as good myself, but operative in the sense that you could put the parts together and operate them, in a patent sense, that is, the type of operability needed for patent work, I think it would.

Q. That mounting is such that the shank can be adjusted vertically to an adjusted depth of hoeing? A. Yes. It can be adjusted vertically anyway.

Q. You described the action of the tooth in the Petersen structure when it strikes an obstruction. Did you find that in the Petersen specifications? A. Well, not in detail as to just what happens to the bottom part of the shank or tooth. It tells more as to the movement of the part 2 and the shank up in there and the guiding of those parts by the lateral cheeks so that the tooth will not rock in its action but will stay relatively straight.

Q. Mainly what was described was the lateral cheek, as you referred to it, to keep it from having lateral movement? [687] A. That is correct, and indicating what he was dealing with was the type of mounting which would move and pivot.

Q. I believe you also mentioned a boss on the dark green member, No. 2. You have colored that boss brown in Defendants' Exhibit 11. Did you find anything in the specification of the Petersen patent that says there was a boss there and it was on that plate? A. No mention of it at all.

Q. You merely assumed it was on the plate? A. No, I wouldn't say that. It has been my business for many years to read drawings of this kind, and that is what the drawing says to me just as clearly as though it said it in English language, or in the Danish language with a translation.

Q. Of course that part you have colored brown could be fixed inside of the spring, couldn't it? A. Well, if one didn't want the structure to perform, I presume it could.

Q. There is nothing to tell you actually how it is made? A. Well, there is no language referring to it. I wouldn't agree with you that there is nothing in the Petersen patent to tell us how it is made, because it is quite clear to me as to what it is and how it functions, quite comparable to a rather conventional and standard [688] method of doing things.

Q. And did it tell in there that there was anything to center the spring relative to that plate? A. No.

Q. I believe you mentioned the hinge member was between the tooth and the fixed member, is that right? A. I think I may have said that the hinged member is between the shank and the fixed member, again in the sense of being placed between, but not—the hinged member itself doesn't contact any face of it--well, it does contact a face of it, too.

Q. It has this contact here at the pivot pin with a part of the fixed member, doesn't it? A. Below the pivot pin slightly between the portion 17 of the hinged member and the portion 18 of the fixed member.

Q. You say below the pivot pin? A. Yes, starts slightly below and extends down the full length.

Q. It could be almost on a line with the axis of the pivot then, could it not? A. Well, if it were different it could be as you describe it. But I say it starts, as I have looked at it rather carefully, it starts slightly below the pivot pin and continues on down.

Q. That is the part you have colored dark green on [689] Defendants' Exhibit 11 in the broken out part of the yellow portion here (indicating)? A. Yes, that is the crosshatched part that is colored dark green.

Q. Now, in the operation that you described I believe you said that the structure in operation would be moving to your right, looking at Defendants' Exhibit 11, is that right? A. I believe that is correct.

Q. And the forces then that would be applied to this tooth would be a rearward movement tending to rock the tooth clockwise about the pivot? A. Are you asking me that?

Q. Yes. A. Would they be?

Q. Yes, sir. A. Yes.

Q. And that force on that shank or tooth is toward the loop that you have colored light green, toward the bar part of the loop? A. That is correct.

Q. And it is opposite in direction from the part that you think is a flat face on the upper portion of the plate member of the pivoting member in Petersen? A. It was directed away from that at that particular point, [690] yes.

Q. And that force then would tend to cause a movement that would move the upper portion of the shank over and hold it tight against the face of the hinge member? A. I don't think so. I don't visualize any movement of it against the plate, because I visualize it as already in contact with it, so that if there is any movement it would tend to move away from the plate. Now, the plate and the upper part of the shank would undoubtedly move in a clockwise direction if the load was sufficient to compress the spring.

Q. But a component of the force acting on this tooth would tend to hold the tooth tighter against that face of the plate member then, wouldn't it? A. At the very top, you mean?

Q. Along the whole face of it. A. Oh, I don't understand it that way, no, sir.

Q. You think that there would be looseness in the structure? A. No, I don't think that there is looseness at any time.

Q. You think it is held tight at all times? A. I think that is the way it would be.

Q. And if something is in engagement and tight you can't have any additional force that would tend to make it tighter? A. Oh, that is a different question. There can be a force [691] which might tend to do something, but I believe that it would tend to pivot about its contact with the bolt 6, which if there was any possibility of it, it would move the lower portion, that is, of the shank, away from the plate and would tend, perhaps at the very top, tend to hold it a little tighter at the very top.

Q. Do you think that this force acting on the shank would move the tooth away from the plate at the lower end? A. I don't think so, although it is possible if there was any degree of looseness there, not enough looseness to let the shank move but enough to leave a minute amount of play.

Q. It is only held by a set screw, isn't it? A. That is right.

Q. Now, this tendency that you refer to, if we have the shank out of the ground the set screw is all that is holding or applying any force tending to hold the shank against the plate of the hinge member, is that right? A. Yes, sir.

Q. And then we put the lower end of the tooth into the ground so that there is a rearward force on the lower end of that tooth. That force would also tend to be transmitted into the upper part of the tooth above the loop, would it not? A. Well, yes, to some extent, depending on circumstances.

[692] Q. So it would apply some force then on the upper portion of the tooth toward the face of the plate that is engaged in? A. I would think so, toward the upper part of it. It would tend to rotate the tooth in a clockwise direction, as well as the hinge member.

Q. So there could be more force then exerted on those contacting faces, due to the force on the lower end of the tooth? A. At the upper part of the—upper end of the shank, at the point of contact there.

Q. Now, if we would turn that around and apply the force in the opposite direction on the lower end of the tooth, what would happen to the fastening of the tooth? A. Well, if the fastening was in its proper position I would say there would be nothing would happen. There would be a tendency, a force at the upper end, but if properly held it would hold against the plate. If there were looseness in the bolt, the upper end might tend to move slightly away from the plate.

Q. Now, these prior patents of Dunbar, Rix and Cobb, can you tell us about what the dates of issuance of each of those patents were? A. Yes. Dunbar was 1878. Rix was 1883. Cobb was 1883.

Q. Now, all of the patented structures that you show on [693] Defendants' Exhibit 11, none of them except Graham 811 would be expressly for chisel plowing? A. I believe that is correct. You have limited that to patented structures.

Q. And you don't have anything on that Exhibit 11 as to a spring clamp for plowing that was prior to Graham's 811, do you? A. Will you read that back, please?

(Question read.)

The Court: Are you again limiting it to chisel plowing, in that sense, as distinguished from cultivating harrow?

Mr. Gold: Yes, sir.

A. I think not. I am not sure about the Glencoe dates, but I don't believe that is prior to 811.

Q. (By Mr. Gold) In the Petersen structure if the set screw numbered 6 would work loose the shank would come out, wouldn't it? A. If it worked sufficiently loose under some circumstances it might come out. It could work loose and not come out at all, and it could work loose and continue to operate under a great many conditions.

Q. That would be pretty light conditions, wouldn't it? A. No, I don't think that would affect it particularly. It would be—so long as the conditions were such as to [694] exert rotary forces as distinguished from downward pull forces, I don't think that the device would come out, depending of course on how loose it would be.

Q. You don't think there would be any upward force on it? A. There would be some, but relatively I believe that the upward force ordinarily, as distinguished from a rotary force in a device of that kind, would be less. Now, naturally if it is sufficiently loose and the circumstance is such it would fall out. It is supposed to be held in the tight position.

Q. There is no fastening means between the shank and the plate such as disclosed in the Graham 798 patent, is there? A. Well, such as the bolt 56 in the 798 patent, are you asking me?

Q. Yes. That is what is disclosed, isn't it? A. Well, that is a part of the means for fastening and holding it. The stirrup is similar in many respects, but there is no bolt of the kind that is shown in the 798 passing through the shank and the hinged member.

Q. The Danish patent of Petersen was cited by the Patent Office during the prosecution of the application that resulted in the Graham 798 patent, wasn't it? A. Yes.

Q. And it was allowed over the Danish patent? [695] A. Well, it was allowed with that as a reference, yes.

Q. Now, if you were going to follow the teachings of the Petersen patent you would certainly consider the application of the force as applied to it and provide your structure with the same application of forces, wouldn't you? A. Well, if I were to apply the entire teaching of Petersen, yes. If I were just going to use that complete type of clamp.

Q. So if you were going to use parts of it you would still want to consider the way the forces were applied to those parts, wouldn't you? A. Well, not necessarily. The same type of structure might be quite suitable for different application of forces.

Q. But there wouldn't be anything in the Petersen patent to show that, would there? A. Well, no, but—

Q. That would be your own ingenuity that you could find some other way of applying the forces? A. Well, the point is that you are not applying the forces particularly, you are using the structure in some other arrangement, certain parts of it, say.

Q. If you change the relationship of the forces you wouldn't have the same situation and therefore you wouldn't be following the teachings of the patent then, would you? [696] A. Well, not in its ultimate and complete detail, but I believe that one can very fairly be said to be following the teachings or utilizing a part of a structure, even though it might be put in a different total composite structure.

Q. Can you look for some other place to tell you how you would apply the structure in this other device? A. Oh, I don't think that is necessary, sir. We are talking as of 19—well, in the 1950's. If we were talking about 2,000 B.C. perhaps that would be true, but all of these I believe are to be considered in the light of the vast storehouse of knowledge which even the most ordinary of mechanics had as of 1950, '53, whatever this date that we are talking about is. Well, 1950, if we go back to some drawing they have heard about sometime after 1951, if we pay attention to the change in beliefs of Mr. Graham, as I remember them, at 1951, he was saying that a structure such as we are now talking about wasn't much good. So if we think of it in terms of some time after that when the matter had been discussed from the witness stand, we still have that storehouse of knowledge that these things are to be viewed in the light of. Our patents would be many, many pages of drawings and of specifications, if we had to describe every detail on the basis of starting from a vacuum.

[697] Q. I believe you were saying that Mr. Graham said such a structure wouldn't be much good. His testi-

mony was that in the 811 structure he didn't believe that it would be operative to put the pivot above the shank; isn't that what he said? A. My recollection is that there was considerable testimony. I haven't looked at it recently and the details—

Q. Your memory could be quite hazy about it then? A. No, there are certain things that stand out. I had occasion to talk about that last week, that there are some things along the line that we remember rather clearly, and I remember rather clearly that he said that longitudinal movement as between the shank and the hinged member was essential, that it wouldn't be satisfactory to bolt the two together, and that a fixed pivot wouldn't be satisfactory, and so forth.

Q. And that is when he was testifying about the 811 structure? A. That is correct.

Q. Now let's look at the Glencoe device. I believe that is shown in the second from the right at the lower part of Defendants' Exhibit 11? A. Yes.

Q. The Glencoe device has a shank between the hinged plate member and the fixed member? [698] A. Yes, although not in contact with it.

Q. In that aspect it had the same relationship as in the Graham 811 patent? A. Yes, in the aspect of being placed above the pivoted member, differing in the matter of contact of the upper surface with the fixed member.

Q. With the location as between the fixed member and the hinged member? A. Yes, in that limited aspect they are similar.

Q. The drawing that you have on Defendants' Exhibit 11 showing the Glencoe structure, that is not a reproduction of a patent drawing, is it? A. No.

Q. In that instance the small numerals and the leader lines are your own? A. Yes.

Q. You are familiar with the Rolf patents? A. Yes.

Q. The Rolf patents were on the Glencoe structure? A. Well, they were on a Glencoe structure. It is my understanding that they cover particularly some details perhaps that were developed later than the particular model that we have here. I haven't studied them in detail for that, no, sir.

Q. When you were describing the Glencoe structure you [699] mentioned the part that you had numbered 29 and called it a stirrup. That was to make it sound like Graham's, wasn't it? Rolf called it a channel element and a seat element, didn't he? A. Well, I have no objection to using any of the numbers. Of course when the structure is substantially the same as a structure with which we are concerned here I naturally use that nomenclature rather than some other nomenclature that would tend to indicate a difference where none exists.

Q. We could say that that portion of Glencoe is an upwardly extending loop, couldn't we? A. Yes.

Q. With a stirrup it would be depending, would it not? A. Oh, normally, yes. When that nomenclature, which is carried over from harness usage, is then applied to structures of this kind I don't believe that it changes it if you turn the piece upside down.

Q. You have read the record in the second Jeoffroy suit, haven't you? A. I would say no. I have seen some portions of it but I haven't read it in detail at all.

Q. Did you find in that record where Jeoffroy had filed an application for patent on his HT-5 device? A. I didn't see that in the record, no.

[700] Q. And I believe you said that you knew that there were patents issued to Rolf on the Glencoe device? A. Yes.

Q. When Mr. Rolf filed his application, he filed an oath stating that his devices had not been in public use for more than one year prior to the application date, isn't that right? A. I don't know anything about that, sir.

Q. That is customary in filing the application, isn't it? A. Well, as far as his particular improvement or part that he was claiming, yes.

Q. All applications have to have such an oath? A. That is correct.

Q. Did you read where Mr. Rolf then later swore that he had in his devices—

Mr. Morris: May I inquire, Mr. Gold, what the purpose of this line of questions is? I don't want to object to it if you have something in mind, but it seems to me it is totally immaterial and irrelevant and that the sole purpose you could have in mind would be to impeach the credibility of Mr. Rolf, who is not here in court and not here to testify. I object to it as immaterial and irrelevant to any issue in this case.

Mr. Gold: I wanted to see how much this witness [701] knew about those applications. I thought maybe I would have some other question on it, and the situations involving the Glencoe structure.

The Court: According to my understanding, it should be admitted as proper cross-examination.

Q. (By Mr. Gold) Can you answer? A. What is the question?

Q. I believe I asked if Mr. Rolf later swore in his application that the device had been in public use prior to the Graham 798? A. I don't know anything about that, sir.

Q. The Rolf application was pending in the Patent Office while the Graham 798 patent was pending, wasn't it?

Mr. Morris: Which Rolf application are you inquiring about, Mr. Gold? There were three.

Mr. Gold: I think all of them were pending at the same time.

Mr. Morris: That may be true, but you might identify them.

A. Answering your question, I have information on—

Mr. Morris: Just a moment. Let Mr. Gold identify which one he is talking about.

Mr. Gold: I would like to have marked the file wrapper of a Rolf patent, No. 2,739,518 as Plaintiffs' Exhibit O, and a soft copy of that Rolf [702] patent as Plaintiffs' Exhibit P.

(Plaintiffs' Exhibits O and P were marked for identification.)

Q. (By Mr. Gold) Mr. Fishleigh, I hand you a soft copy of the Rolf patent No. 2,739,518. It has been identified as Plaintiffs' Exhibit P. Tell us the filing date of that application that matured in the patent. A. April 19, 1952.

Q. Do you know when the 798 patent issued? A. February 10, 1953.

Q. Then that application that matured in the Rolf patent was co-pending with the Graham 798 application? A. Yes.

Q. Now I have opened the file wrapper of the Rolf patent, Plaintiffs' Exhibit O, to page 15. That is an office action from the Patent Office, is it not? A. Yes.

Q. That cites the Rix patent No. 287,965, which is the one that we have been talking about previously as shown on Defendants' Exhibit 11? A. Are you asking me that?

Q. Yes, sir. A. Yes.

Q. Will you tell us the initials of the examiner that gave that office action. [703] A. "Lip." There are some pencil initials above, "RFL" but I don't know what that means.

Q. Do you have a copy of the file wrapper of the Graham 798 patent? A. Yes.

Q. Now you will turn to page 39 of the file wrapper of the Graham 798 patent, Defendants' Exhibit 4; that is an action from the patent office on the Graham 798 patent, isn't it? A. Yes.

Q. And what are the initials of the examiner on that action? A. Well, down in the typed initials it seems to be "Lip".

Q. That is the same that was on the action in the Rolf application, isn't it? A. The same typed notation at the bottom, yes.

Q. Now, the date of that action on the Graham 798 is November 14, 1952? Is that right? A. Sir?

Q. The date of the Patent Office action on page 39, that is November 14, 1952? A. Well, I —

Q. That is the stamp put on that shows the filing date of the action and the Patent Office division, does it not? A. My photostatic copy doesn't have such a stamp, or I don't see it if it does.

[704] Q. It apparently hasn't been reproduced in your copy? A. It has failed to come through. Yes, the stamp is November 14, 1952.

Q. That is on page 39 of the file wrapper, Defendants' Exhibit 4? A. Yes.

Q. Then apparently the same examiner was handling the Graham 798 application and the Rolf application, isn't that right?

Mr. Morris: Your Honor, that is a pure conclusion, I don't suppose there is anything in this regard—"Lip" in one file and "Lip" in another file, no name shown here, I don't believe the Court or anybody else would be entitled to make that conclusion. It may or may not be true, but it would just be a pure guess on the part of anyone.

The Witness: May I see your copy a moment?

Mr. Gold: Yes, sir.

The Court: I would like to ask a question in that connection. Is the name of the examiner Mr. Goldberg?

Mr. Gold: He is the chief of the division.

The Court: And these initials in the lower left-hand part of each page—

Mr. Gold: Would be the assistant examiner [705] handling the application that made the action.

The Court: Who would initial it? Would that be the assistant examiner?

Mr. Gold: They have different grades of examiners and they have the under-examiners and the supervisors, and this would probably be the supervisor of that under-examiner that would initial it.

The Court: "RFL" would probably be the supervisor then, is that correct?

Mr. Gold: Yes.

Q. (By Mr. Gold) Mr. Fishleigh, doesn't "RFL" appear on the Graham action that was dated November 14, 1952? A. Yes, but I don't know—even you say that probably is what it means. So if you don't know better than that, I certainly don't know what the practice is there as to what an initial of that sort might mean. Those initials do appear on both sheets. That is as far as I know about it. But the signature of course is different.

The Court: What do you mean, the signature is different?

A. Well, the signature of Goldberg is not either "Lip" or "RFL."

The Court: It appears to the Court that the initials "RFL" are the same, at least appear on the [706] surface to be the same on both papers.

Mr. Morris: Your Honor, I don't want to quibble about this thing.

The Court: I don't know that it has too much probative value. I think you might surmise it was the same individual. Conceivably there could be two individuals with the initials "Lip." I presume the printed initials "ms" after one and "wm" after the other would refer to the person who wrote the letter, the instrument.

Mr. Gold: Who typed it.

The Court: Who typed it, yes.

Mr. Gold: Yes.

Mr. Morris: Certainly I have no objection to offering these file wrappers in evidence for whatever they are. My objection is calling on this witness to make the conclusions as to what those things stand for.

The Court: Of course if he doesn't know he can just say he doesn't know.

Mr. Morris: All right.

Q. (By Mr. Gold) Now, it would appear that the examiner in the Patent Office that handled both applications was familiar with the Rix patent, would it not? A. I don't know that, sir. All I can say is that on those two sheets you showed me there are some similar or [707] identical initials. Now, what that meant in the practice there I don't know.

Q. You are not familiar with that practice? A. Certainly not to any such detail as that.

Q. I believe you have testified that you have studied many file wrappers in connection with patent litigation. Haven't you made yourself acquainted with practices in the file wrappers and what they show? A. Well, yes, but not from the standpoint of what individual in what position initials what, or as it shows here, a letter is signed by one man and another man's initials appears, and still a third one's initials. Now, just what those mean I haven't any idea.

Q. Assuming that they were the same examiners handling the two applications, it would appear that he was familiar with the Rix patent, would it not?

Mr. Morris: Your Honor, this is not a proper area for opinion testimony. Those conclusions can be drawn as well by counsel or the Court as this witness can draw them. It is just not something upon which people are called upon to express opinions. It is not an area for opinion testimony. It is incompetent.

Mr. Gold: Your Honor, I believe that this is an expert witness here who has indicated he had a great number of qualifications, had studied many file [708] wrappers, was familiar with such things, and apparently he now doesn't know what is the practice, but I think that he could testify as to what would appear from these papers as to the knowledge of the examiner handling these applications of the Rix patent, and he has indicated previously that the Rix patent was not cited against the Graham application to apparently make something of it. I think that in cross-examination we can show the examiner knew of the Rix patent and didn't see fit to cite it. I think it would be obvious.

The Court: I think it might have some relevancy to the qualifications of the witness on this particular point. It doesn't prove anything of probative value on the issue, but might go to his qualification.

Mr. Morris: Your Honor, I don't believe this witness has even attempted to say that he has any particular knowledge of the intricacies of Patent Office procedure, particularly these administrative matters.

The Court: I think that is what he is cross-examining him about. He did make a statement that he was very conversant with patents, had testified in many patent suits.

Mr. Morris: Yes, sir.

The Court: I think it is a proper area of [709] cross-examination to inquire as to his qualifications along that line.

Mr. Morris: If the purpose of the examination is to inquire as to qualifications, for that purpose, that limited purpose, I withdraw any objection. But his purpose is not that. His purpose is to attempt to show by this witness that the examiner who handled the application of 798 was the same examiner who handled the application of the Rolf patent, and since that examiner cited Rix in the Rolf application he must have known at the same time about it when he was handling 798. Now, that is the purpose of the examination.

The Court: I don't know that you could necessarily make a factual conclusion on that. The witness has stated he didn't know, that it might not be the same individual in both cases.

Q. (By Mr. Gold) When applications are filed in the Patent Office, by different inventors, and they are claiming the same thing and the applications are co-pending, they can be put in interference, can they not? A. Yes.

Q. That is a Patent Office procedure, to see who should receive the patent? A. That is correct.

[710] Q. There was no interference prepared between the Graham and Rolf applications, was there? A. None that I know of.

Q. You mean there might have been one that you don't know about? A. I don't think there was and I haven't seen anything about it in the Graham file wrapper, so I assume there was not. Whether there was any attempt to set up an interference I don't know.

Q. From your study of the file wrapper you don't know whether or not there was an attempt to set up an interference? A. There is nothing that indicates it there.

Q. Now, when you consider the direction of forces as applied to the Glencoe structure in plowing operations how would the force be applied to the hinge member, as we may call it? A. Well, the shank would—the forces would be such as to make it tend to rotate about the pivot point 8 and it would carry the hinged member with it, exerting some force on the loop 29 that turns it in clockwise direction and some force at the other end to assist in turning it.

Q. In the Glencoe structure you would have an upward and rearward force on the shank that would be applied in the [711] direction toward the loop at the bar of the shank, isn't that right? A. That is correct.

Q. It would be in a direction opposite from the face of the hinge member that is engaged by the shank forwardly of the loop? A. That is correct.

Q. And in that force the edge of the loop would tend to act as a fulcrum for the shank? A. Oh, I rather doubt it in that instance. I think the entire bottom of the loop would be contacted and I don't believe there would be, with as stiff a structure as that, there would be any particular fulcrum action about that point as a point.

Q. And won't you agree that this force would have a component that would tend to apply pressure, making the engagement of the shank tighter against the face of the hinge member? A. At the extreme right end and near the bolt I believe that would probably be true. I don't think it would be true throughout the rest of the space between the bolt and the loop or stirrup 29.

Q. And the point of the greatest stress in the shank would be immediately at the rear of this loop 29? A. Well, in the sense of any severe localized stress there [712] I rather doubt it.

Q. You doubt that? A. Yes.

* * *

[713] Q. (By Mr. Gold) I believe you doubted that that would be a high stress point in the shank on the Glencoe structure immediately to the rear of the loop, Mr. Fishleigh? A. I believe that is correct. It might have somewhat higher than some of the other places, but in the sense of being a high stress point carrying any implication of probable failure, I doubt it.

Q. You would also doubt that there would be a high stress point here at the rear of the hinged member in the Deere 100 series, Defendants' Exhibit 27-A? A. In the sense of causing a substantial failure there I [714] have some doubt about it. It might be somewhat higher than at many other places, but I don't believe that would be a high stress point in the sense of indicating a point of probable failure.

Q. You say it might be a higher stress area. Do you know whether it would be or not? A. I haven't checked the detail for stresses to test it, so in that sense I don't know.

Q. Then you haven't checked the Glencoe device in detail as to the stress either, have you? A. Not in the laboratory with any stress analysis equipment.

Q. So then you don't know about the stress in the Glencoe shank? A. Well, from the standpoint of testing it I don't know. From the standpoint of understanding the structure and having seen those which had been operating in the field I think I can say I do know.

Q. That knowledge wouldn't be sufficient for you to have a definite opinion relative to the Deere structure, the 100 series? A. Well, yes, to the same extent. I have seen a number of those and I haven't seen any indication of sufficient high stress to cause failure at that point.

Q. By failure you mean breakage? A. Well, that is what I specifically meant, but I would [715] also include in that permanent set or permanent distortion.

Q. I didn't ask about failure, I asked about a high stress area, didn't I? A. Well, yes, but high stress is indicative normally of—tied in with a dangerous point or a failure point. Any of these things, just putting it that way and comparing it with nothing else—you have high stress throughout one of these shanks.

Q. You probably spent two hours observing the operation of the devices in issue here? A. Well, and then considerably more, sir.

Q. Was that in the field? A. Both in the field and from the standpoint of observing the possible reaction to rather severe stresses in the laboratory.

Q. And you have probably seen three or four plows with the Deere clamps on them? A. Oh, of the Deere 650 and Deere 100 I would say possibly some more than that, but not a great many more than that.

Q. The hinged plate of the Glencoe structure was cast, was it not? A. I believe so, yes.

Q. And there is some tolerance in the loop portion of the [716] shank so the shank could be inserted into it? A. Undboutedly, in those that I have seen there was.

Q. You would consider that the obvious way to make it, wouldn't you? A. Yes.

Q. And that was about the same clearance that was in the Jeoffroy HT-5 clamp, wasn't it? A. I don't recall having checked that. May I look at that for a moment?

Yes, of that general order.

Q. That same clearance would probably be obvious to put into the Graham 798 structure? A. Well, not if you were going to build a structure to follow the teachings of the Graham 798 structure, carrying it into the structure defined by the mechanical elements of the claims and the description of that as pointed out in the file wrapper in explanation of what those terms meant.

Q. That clearance that might be in that loop portion doesn't have anything to do with the direction of forces on the shank relative to the elongated plate of the hinged member or the bend of the shank relative to that plate, does it? A. Oh, I don't think much. Of course if it was a quite tight fit it might assist in preventing any flexing. [717] Q. If it was quite a tight fit you say it might prevent flexion? A. I say if it was quite tight it might tend to prevent possible flexing of the shaft at that point which might otherwise tend to appear.

Q. It would have to be very, very tight, would it not? A. Well, that is relative. I think quite tight is just as accurate as very, very tight.

Q. Now let's go back to the positions of the hinge member and the shank and the movements thereof and the bending of the Glencoe shank that would take place. Let's go first from its position for traveling and then putting it into the ground and plowing, and what would happen when it struck an immovable object such as a rock? Will you tell us about it? A. I don't quite understand what you mean to say "let's go back to that." What do you mean?

Q. Let's go back and tell us about the movements, the positioning of the shank and the hinged member from the traveling position of the Glencoe structure, get into the plowing, and then when it hits an obstruction. A. Well, in traveling the position would be as shown in Figures 1 and 2 of those drawings on Defendants' Exhibit 11.

Q. And the shank would be supported by its resting on the [718] plate of the hinge member? A. That is correct.

Q. Now, when we put the end of the tool into the ground and have some rearward and upward force in plowing operations what would be the action? A. Well, the force, probably would be depending on how much force. If there was sufficient force it might tend to—well, it would tend to rotate the shank and the hinged member about the pivot pin 8. In that case it would tend at least to push the shank against the loop or stirrup 29.

Q. Push it up? A. Might or might not, depending on the amount of the force and the tightness of the holding. But there would be a tendency to, a force tending to push it up.

Q. And then when it strikes an immovable object like a rock, what would happen? A. The same thing only to a greater extent, the force would be greater. Probably in ordinary plowing if it did open up at all that would depend on the amount of tension in the spring or the amount of compression in the spring. The springs might be so adjusted that although there was a tendency for the hinged member to rotate clockwise it would not be allowed to rotate. When it hit an obstruction with a severe force the [719] spring would be compressed and there would be undoubtedly some movement in a clockwise direction of the hinged member.

Q. These springs that we have on the defendants' structure, like in Defendants' Exhibit 27-A, they are pretty strong springs, aren't they? A. Relatively so, yes, sir.

Q. In order for the shank to jump a rock or the tool to jump a rock, you might have to compress these springs down to where it would open up as much as four inches, is that right? A. I think that is a possibility.

Q. And you might get into the question of forces that would be substantial then, wouldn't you? A. Oh, I think all of the forces in connection with these plows are what would be classified in my vocabulary as substantial.

Q. To get this particular 100 series clamp to open up to that extent you would probably have a force acting on the front of this place of in the nature of four to five thousand pounds, wouldn't you? A. Well, I believe that is perhaps a little bit excessive, but at least it might well go up close to that figure.

Q. Some of these plows have been found to go up to that figure, haven't they, four thousand pounds or so? [720] A. Up to four thousand pounds or so?

Q. Yes. A. Yes, I would say up to four thousand pounds or so.

Q. And could even be more in some instances? A. Well, that is a possibility, I presume.

Q. So we are talking about very substantial forces then here, aren't we? A. Yes, all of the forces here are substantial.

Q. When we talk about four thousand pounds we can bend one of these shanks too, can't we? A. Well, it is possible, depending upon just how it is applied and the reactions. I don't believe that four thousand pounds would necessarily put a permanent set in these shanks.

Q. Not necessarily put a permanent set in it, but it would certainly cause flexing of the shanks, wouldn't it? A. Oh, certainly.

Q. I believe you suggested the elements that you listed in Defendants' Exhibit 11 were in the same environment as the Graham 798 structure. You had in mind that they would be used on agricultural implements? A. Well, that was not what I was thinking about. I was thinking about the relationship of hinged members and plates and springs to give a spring clamp which certainly, as far as its over-all general operation and [721] functioning, was quite similar, as distinguished from merely perhaps going out and picking up a spring which was on a—well, a coil spring out of an old automobile engine or even a coil spring out of the front wheel spring of an automobile, or something like that, where the functioning and the environment was quite definitely different.

Q. These structures that you have shown there are different considerably in each case from the Graham 798, aren't they? A. Oh, they differ in detail certainly.

Q. Now, let's turn to Defendants' Exhibit 19.

* * *

(Recess.)

Q. (By Mr. Gold) Mr. Fishleigh, we now have Defendants' Exhibit 19 on the easel. I note that you show an illustration of the Carter patent, No. 231,268. That relates to a harrow tooth device, doesn't it? A. Yes, a spring harrow tooth.

Q. Did you ever see a device—the Carter device in actual use? A. No, sir.

Q. The Carter patent doesn't show any elongated plate on a [722] hinge member or movable member, does it? A. No, sir.

Q. I believe you said that the sides of the member colored dark green on the Carter drawing would be pulled together by bolts to clamp the shank in place, is that right? A. I believe that is correct, yes, sir.

Q. You didn't find that in the Carter specification, did you? A. I don't think I found the detail of that described there, no.

Q. The Carter patent doesn't tell how the shank is held in place, does it? A. No.

Q. Can you read the claims of the Graham 798 patent on the Carter disclosure? A. No.

Q. The use of the Carter drawing on Defendants' Exhibit 19 shows how broad you characterized those elements in your evaluation of the prior art, isn't that right? A. Well, I am not evaluating elements, I am simply showing different methods of connecting shanks to shank attaching members, as illustrated there.

Q. In order to show something which you would fasten the shank to? [723] A. Well, that is what the chart is intended to show, the different methods of it.

Q. The part colored dark green in Fig. 2 of the Carter drawings doesn't even look like the part of that color in Fig. 1, does it? A. Well, it doesn't look precisely that way, but the perspective is not what I would consider a good perspective.

Q. It could be two different forms? A. I don't think so, because the parts are quite similar and the description carries over, but certainly it doesn't look as I would want one of my draftsmen to draw in perspective, but I believe it is intended to be. In fact, the patent says it is a perspective of the block in which the tooth is held. It doesn't say it is a modification or anything different.

Q. Now, if you will look at the part marked with the letter "E" in the Carter illustration, that extends over the top of the part that you marked or colored dark green, doesn't it? A. Yes.

Q. And that would tend to keep the part colored dark green from pivoting then, wouldn't it? A. No, I don't think it would.

Q. It would just ride up over the edge of that part that [724] extends up over the top of it? A. No, if we look at that part in Fig. 3 we see that there is an opening there to permit the portion of the part "G" back of the pivot pin "L" to go up through.

Q. Are you referring to Fig. 3 of the patent drawings, in the patent itself? A. Yes.

Q. You say that that has an opening that would be up at the top in the part that I have indicated over the dark green portion in Defendants' Exhibit 19? A. I am sorry, I have been looking at the other end of it there.

Q. The part that is in the Fig. 3 is upside down actually from what it would be in Fig. 1, isn't it? A. That is right, yes.

Q. So that opening you referred to would be on the bottom part of the member "E" then? A. That is correct.

Q. In view of that, what about the part over the top of the dark green portion, would that interfere with the pivoting action? A. Well, it can pivot about that to some extent. It might interfere with it if it is there just as shown, that is, pivoting about the pin "L" precisely, if that is precisely.

[725] Q. It would probably have to slide back and forth in any pivoting or rocking action, wouldn't it? A. Well, it would depend on just where the pivot was with respect to that overhanging portion.

Q. You didn't have any difficulty interpreting the structure of that patent? A. Not to speak of.

Q. And considering a bolt or a rivet or a set screw for connecting a shank to some other part doesn't mean much unless its relationship and forces applied to it are also considered, isn't that right? A. I guess as broadly as you ask it I would say yes.

Q. Let's take the teachings of the Carter patent to modify the Petersen device. It would be quite difficult to substitute the part of Carter that you have called the shank attaching member for the dark green part 7 of Petersen, wouldn't it? A. Oh, I think so. They are quite dissimilar structures.

Q. It would be a very difficult modification? A. Quite a different type of structure.

Q. It would have a complete reconstruction almost, wouldn't it? A. Well, I don't think—it doesn't occur to me where you would want that particular substitution that you refer to.

[726] Q. There would be nothing to indicate that you should make such a substitution, would there? A. Of the hinged member of the Carter and Petersen?

Q. Yes. A. Well, I see no reason for it, at least.

Q. About all your Exhibit 19 shows is that bolts, rivets and set screws are old in the art? A. No, I don't think that is a fair statement of it at all. What it shows, if I may indicate my thought of it, is that there have been in the art various and sundry means of connecting shanks or various and sundry spring clamps having some means for connecting the shank to the shank attaching member, and as carried out into some detail, some of them, such as Rix, Glencoe and Cobb, in which the type of structure used for that connection and its relationship is very close, very similar to that of the 798, if not substantially identical.

Q. Actually then you are presenting that chart to give us some teachings of the prior art that we should use to modify other prior art then? A. No, that isn't what the chart says. It just shows what is old in the prior art along this line and how close some of it comes, which would indicate how little of a contribution, if any, had been made in that respect [727] at least in the 798 patent.

Q. Now, supposing you take the Carter teachings to modify the Cobb structure. Can you tell us about that? A. No, I haven't made any suggestion of modifying Cobb with Carter. I feel in that instance that they are rather different structures and do not particularly adapt themselves to interchanging.

Q. You would say the same thing relative to following the teachings of Carter to modify the Rix structure, wouldn't you? A. Oh, I think as far as Carter is concerned that is perhaps the furthest type from the type of thing we are talking about, but still is one method of connecting a shank to the shank attaching member.

Q. And it doesn't teach us very much then on modifying any of these other prior art structures? A. No, I don't think that it does.

Q. I now place Defendants' Exhibit 20 on the easel. You also show Carter on that exhibit, don't you? A. Yes.

Q. In that exhibit you are considering positions of parts without regard to the direction of the forces that are applied in operation, isn't that right? A. Oh, I think so. I am figuring the structural positions of them.

[728] Q. In the Rix structure the loop is integral with the member "c"? It is all one piece? A. That is correct.

Q. You didn't follow that same theory of coloring in connection with Cobb, did you? A. Well, there should be no difference in the coloring. Actually the loop in line with our general showing has been colored light green and it should have been in Cobb as well. If not, it is just an error in possibly coloring this particular chart or in my approval of the chart. But the portion corresponding to the loop in Glencoe, Rix and Cobb should have been colored light green.

Q. Of course in Defendants' Exhibit 20 you didn't color the loop part of the Rix structure, did you? A. No.

Q. Nor in the Petersen structure? A. No, because we were pointing out that portion of it which was between the shank and the fixed member. However, it could have been colored and it would not have detracted from it at all, and certainly it is not intended to show anything different.

Q. I believe on your direct testimony you read some parts of the Graham 798 file wrapper, but you don't know how the examiner interpreted those statements, do you? [729] A. No, certainly not.

Q. You also mentioned that the file wrapper showed there was two personal interviews with the examiner, and you don't know all that was said at the interviews to bring out the advantages of the 798 structure? A. No, I am sorry to say that the details of those interviews were not recorded in the file wrapper.

Q. You don't know anything about any distinction as to the forces and the flexion of the shank? A. No. I assume in that last question you mean that I don't know anything about what distinctions of that nature were brought out in the interviews?

Q. That is right. A. O. K.

Q. Now I have placed on the easel Defendants' Exhibit 22. That shows Claim 1 of the 798 patent, I believe, does it not? A. Yes, broken down into its mechanical elements.

Q. You show the underface of the fixed member as being red? A. Yes.

Q. There is nothing in the Claim 1 to define the extent of that underface, is there? A. Not extent, but that is the underface and there is nothing in the claim to indicate that it refers to [730] only a portion of the underface.

Q. You could reduce the area that you have marked red, the area of the underface, and still get a response for that part of the claim, couldn't you? A. Well, if somewhere in the specification or file wrapper there had been a statement to the effect that when we say underface we mean just that portion of the fixed member back of the spring bolt, or something of that sort, then that could have been taken that way. But when I read the specification and particularly the file wrapper, when it says that that underface extends substantially the full length of the fixed member, I can arrive at no such conclusion as you suggest.

Q. Of course if we cut out that part behind the bolt that is in the fixed member, the part then forward of that that you color red would still be a part of the fixed member, would it not? A. As it stands here it would be a part of the underface of the fixed member.

Q. And it would still be longitudinally of the fixed member, would it not? A. That part of it perhaps could still be described that way if it were so pointed out.

Q. The claim element says, "A fixed member adapted to be [731] fixed to the transverse member of the frame and having a longitudinally extending underface terminating forwardly of the transverse member to which said mounting is adapted to be fixed." Now, if I have eliminated that portion to the rear of this bolt that you have colored yellow in the fixed member I would have a response to that portion of the claim, would I not ? A. Well, you might have a response, but what this chart shows is what is the response in the structures shown in the Graham patent, and without question the way it is shown in the drawings and with a limited explanation there is in the specification and the detailed explanation when that language was added to the claim in the file wrapper indicates that the response in this structure is that entire portion colored red.

Q. That was added to what claim in the file wrapper? A. Well, this language went in—

Q. I believe you said it was added to the claims in the file wrapper. I want to know which claim was added. A. When it came in it was added to the file wrapper or the claims when this Claim 13 came in, it was a new feature in Claim 13, or a new limitation.

Q. Would there have been other features prior to that time in Claim 13? A. No, Claim 13 was a new claim or rewritten, but [732] incorporating that limitation for the first time in the file wrapper.

Q. Did the file wrapper say that claim was rewritten from some other claim? A. No, I don't think it was.

Q. Just a new claim that was put into the case? A. That is right, incorporating the results, as I recall it, of these two interviews.

Q. Then as to your chart, Defendants' Exhibit 22, you are applying the elements of the claim and interpreting them in the very narrow condition of only what is disclosed in the—the particular embodiment as disclosed in the drawings? A. Oh, as to those claims that is exactly what it does. It points out what, in the structure illustrated in the drawings and described in the specification, provides the response for those elements. It does not at that point indicate anything about any possible breadth to those elements which might be given them in applying them to some other structure.

Q. In this case it is merely to show that the claim can be read on the Graham disclosure? A. Well, more particularly to show what structure in the Graham disclosure does provide the basis for that element, what is the element, structural element in the [733] structure disclosed in Graham which is there being described.

Q. There is no attempt to give any scope to the claim or any limitations to the claim, it merely is applying the elements to the Graham structure and no requirement that it has to include those particular elements in that form? A. Well, that might come later as to how broad a scope, particularly on some of these so-called means clauses.

Q. That would be on your other charts? A. Well, nowhere have I indicated the entire scope on it. I have simply indicated on some of the other charts where I think a scope could not be given to it, to an element, broad enough to cover certain portions of the two accused structures.

Q. Now, in connection with the element that you numbered 4 in the breakdown of the claim, you have means connecting the elongated plate portion with the shank and you have in a little circled part in the center between the illustration and the claim the bolt 56, as colored light green. You also have colored the loop light green and drawn an arrow there. Do I understant that as far as this chart is concerned you are merely saying that those two could be the means that is called for in that claim? [734] A. No, sir, that is not what I am saying. I am saying that those two are the means as disclosed in this Graham structure, which provide the response for that element.

Q. And of course we do agree that the bolt, when it is tight, will maintain the shank in contact constantly and continuously at the front of a hinge member? A. Right under the bolt?

Q. Yes, sir. A. Oh, I think there is no question about that.

Q. And that would be the constant continuous contact that is referred to in that element of the claim? A. I don't believe so at all. I believe that would be a most distorted understanding of it.

Q. That would be a response, would it not? A. No, I don't think so, and certainly as far as this claim is concerned it is not the response of the structure shown in the drawings.

Q. That particular element, reading the entire element, "Means connecting the elongated plate portion with the shank for maintaining the upper face of the shank in constant continuous contact with the underface of said plate portion of the shank attaching member," there is an underface of the plate portion there near that bolt at the forward end, is there not? [735] A. A part of an underface.

Q. It is an underface, is it not? A. A part of the underface.

Q. The shank also has an upper face in that particular area? A. Well, there is a portion at that particular area which is a part of the upper face of the shank.

Q. And do you think that that bolt can hold the shank by itself in operative position relative to that hinge member? A. Well, it calls there for a constant continuous—

Q. I ask you in your opinion could the bolt by itself hold the shank in an operating position relative to that hinge plate member? A. During static conditions I think it might. During operative conditions I am quite certain, when subjected to the type of operating conditions for which it is intended, that it would not.

Q. Now when you say operating conditions for which it is intended, are you thinking about these cultivator conditions which you brought forth in the prior art? A. In this particular instance I am thinking about the conditions which the Graham structure itself is set up for.

Q. For plowing? [736] A. That is correct.

Q. Quite severe stress compared to these harrows and cultivators? A. Well, not necessarily so, because the abnormal conditions which might be encountered in the course of harrowing or cultivating, even though one is doing normally relatively light work, if one hits an obstruction it could be quite severe, although clearly I think there is no question that under normal operating conditions, when you don't need this spring clamp or spring trip device, that the loads are lighter in cultivating and harrowing.

Q. And in the Graham structure you have to have the support of the loop, the bolt itself wouldn't perform, but in the Petersen structure you can even have a set screw loose and it would still operate? Wasn't that your testimony? A. Not exactly, no.

Q. Didn't you testify awhile ago that the Petersen structure would still operate even though the set screw might be loose? A. I said it would operate, but you didn't ask me whether or not this Graham would operate. You asked me whether it would be held in constant continuous contact.

Q. I asked you by itself. [737] A. Yes, by itself, it would be held in—

Q. It would hold it in operative position without the loop? A. Well, that isn't saying whether or not for light work it would operate. It would not do what is said there to hold it in constant continuous contact.

Q. But it would hold it in constant continuous contact at this forward portion? A. Until it broke.

Q. Oh, you think it would break? A. I am quite reasonably certain, if subjected to the type of load for which this type of spring clamp is intended, it would probably break.

Q. And if this Petersen structure was subjected to such load it would probably break too, wouldn't it? A. Not necessarily. There are not the severity of stresses in that structure that there would be in this one, in this 798 structure.

Q. It wouldn't be subjected to the same kind of loading as the Graham would in plowing? A. Well, what I am saying is that if subjected to the same loading, hitting the same obstruction, that if you had just the one bolt back toward the back in that position that you would have quite a different situation than you would have over in Petersen and one [738] which would be much more likely to break apart in that condition.

Q. Do I understand you to say that if in the Graham structure you had one bolt back toward the rear portion that you would have more tendency for it to break? A. Well, I misspoke. I think of it in the sense here, it is really the forward portion of the shank in our normal nomenclature. I am talking about the bolt in the position in which it is there in that drawing.

Q. Tell us the function of the area that you have colored red on the fixed member and the hinged plate member. A. Those are the two faces that are referred to so frequently, the underface of the fixed member and the upper face of the hinged member in these drawings, at least, as to the fixed member they appear only as a line indication, but actually is a substantial surface, and on the hinged member, as shown in the view on the main chart under the flap, it is a substantial surface and that serves here as the stop member to stop the movement of the hinged member and to position the plow in normal operating position.

Q. And if we eliminated the contacting faces to the rear of this bolt that you have colored yellow on the fixed member, so that we only had the contacting faces at the forward part, it would still be a stop to hold [739] it in what you call the home base position? A. That is correct.

Q. So the area makes no difference as to the function? A. Well, that is my view. That didn't seem to be the slant when this limitation was first introduced and emphasized as distinguishing from other structures.

Q. Then that reduced area would be the equivalent of the larger area, as far as the functioning of that clamp? A. In the sense of this patent in suit I would say no.

Q. It wouldn't be the equivalent, wouldn't function in the same manner? A. In the sense of this patent, that is, equivalents, mechanical equivalents, are something that you consider in the light of the situation you are discussing, that is, if—

Q. We are just talking about these two faces now, Mr. Fishleigh, what they will do. A. But to be of any meaning at all you have to consider them in a given context. Out in the shop there might be some similarity, but in the sense that we are talking here, which is the only sense that could have any meaning as to whether or not such a surface is the mechanical equivalent of what is called for in the element of the claim, I say quite definitely no.

Q. Then you are again willing to construe the claim as [740] being required to read only on the specific form shown in the drawings of Graham 798? A. That isn't it exactly. As disclosed in the patent there is only one form shown and that is what the element clearly is directed to and reads upon and finds a response in. Now, under those general circumstances, to find the breadth it can only be said to cover those things which are the same as or the mechanical equivalents, and what is a mechanical equivalent under this circumstance must be measured in the light of the possible advance or the advance, if any, of this structure. That is, if one makes an advance which might be measured, say, as a thousandth of an inch in the art, you can't then go back and cover something, a breadth of a tenth of an inch, even though under some other conditions they might seem to be quite comparable structures. In other words, you can't go back or beyond the point that the advance started from.

Q. I believe you did agree, though, that if we shortened up the area of the contacting faces that they would perform the stop in the same manner? A. I agreed to that, yes, sir. They would perform the stop. I didn't say in the same manner. I said it would perform a stop function.

Q. Tell us any difference in the manner that they would [741] perform the stop function. A. Well, it would be a shorter surface and to the extent that having the longer surface here created any improvement or any advance which helped to carry these claims after claims without that limitation had been rejected, well, then to that extent there is a difference. Personally I see very little improvement in it and very little that warranted the patent, but there it is.

Q. The smaller area of the contacting faces would cause a little more impact force per unit area—or I mean per total area, isn't that right, over what you would have in a larger area? A. May I have that again?

Q. Maybe I had better repeat it. By having a smaller area of your contacting faces with the same impact forces applied, you would merely have a little greater unit stress in those contacting faces, wouldn't you? A. You would have a greater stress. Whether it would be a little greater in the instance you are talking about, I would suspect it would be roughly two and a half to two times greater. But it would be greater.

Q. It would be directly proportionate to the difference in area, wouldn't it? A. To the area, yes, sir, inversely proportional to the areas, I would say.

[742] Q. That is correct. Tell us the purpose of the patent specification. A. Well, ordinarily the patent specification starts out by perhaps describing what the patent—

Q. I asked you what was the purpose of the specification. A. That is what I—

Q. Not its contents, just tell me the purpose of it. A. Well, that is what I thought I was doing, as there are several purposes, as I see it. Three that I had in mind.

Q. Go ahead. A. First, to set forth what the inventor thought was the problem that he was directing his attention to. Second, normally he sets forth the objects, what he hopes to accomplish with his particular invention, what the objects of it are, and third, he describes the structure, one or more forms of the structure which he believes accomplishes the objects of his invention. Normally in what might be called his preferred form.

Q. It is to provide a description of an embodiment of the invention, isn't that right? A. The third portion is to provide the description of one embodiment, yes.

Q. And you have drawings usually in a mechanical device in the application to show the embodiment of the [743] invention, that one embodiment? A. That is correct.

Q. But it is recognized there can be variations from that embodiment, isn't it? A. Within limitations, yes, sir.

Q. If the patent were limited to the precise form shown in the drawings and described in the specification, the patent would have little value, wouldn't it? A. I believe that is correct.

Q. All patents are entitled to some range of equivalency, aren't they? A. Yes, sir.

* * *

[744] Q. (By Mr. Gold) Now, Defendants' Exhibit 23 is very similar to Defendants' Exhibit 22 except it deals with Claim 2 of the Graham 798 patent, is that right? [745] A. Yes, sir.

Q. Now, in your two charts, Defendants' Exhibits 22 and 23, in effect you interpreted the claims as having the same scope, didn't you? A. Well, as finding a response in the same structure because there is only one structure there and there isn't any great difference in the terminology in the claims.

Q. So you didn't really differentiate between the two claims? A. Well, there isn't any great differentiation in the application to the structure shown in the patent. Now, there might be some difference in the equivalents. I believe that perhaps Claim 2 might be narrower in certain respects as far as what might be called equivalents, but it applies to the same structure. In the patent there is only one.

* * *

[746] Q. Mr. Fishleigh, I have placed on the easel Defendants' Exhibit 24. In that exhibit you used your own words to describe the parts of the Jeoffroy SC-580 device, didn't you? A. Yes, except that those words for the most part were borrowed from the mechanical elements of the claims.

Q. Of the Graham 798? A. That is correct.

Q. And that was also true in describing the parts of Rix? A. Yes.

Q. Took a great deal of time and work to devise a chart of that nature, didn't it? A. Oh, that is a relative term. It wasn't done in five minutes, but it wasn't an extremely difficult problem.

Q. Now, in the change that you are suggesting I believe that the first change in Jeoffroy was to move the ears on the fixed member rearwardly and upwardly. Is that right? A. Yes. That is the first one in point of order in—

Q. Let's just stop at that point and we will move those ears upwardly. Now tell us what would be necessary in the Jeoffroy structure to pivot the fulcrum plate?

Mr. Morris: Just upwardly or upwardly and rearwardly?

Q. (By Mr. Gold) Upwardly and rearwardly, and with those [747] ears up I would like to know the changes necessary to pivot the fulcrum plate in that Jeoffroy structure.

Mr. Morris: All I am asking is—you started off with upwardly and rearwardly and now your question is upwardly. Do you intend to incorporate both or just one?

Mr. Gold: Yes, let's incorporate both, so we will have both done at one time.

Mr. Morris: All right.

A. Well, if just that were done alone you would have to either put a different pivoting arrangement on the fulcrum plate or put it in a different position. It is not suggested that that be done without the other movement.

Q. Well, we are going to make these modifications and I wanted to take them one at a time, Mr. Fishleigh, and have you tell me what next changes you would have to make to make that structure operative, when you move the ears rearwardly and upwardly on the Jeoffroy SC-580 structure. A. You mean to make it operative with just making one change at a time?

Q. Yes, sir. A. Well, I don't think it was contemplated that it would be that way. In fact, the reason for moving the ears [748] upwardly and rearwardly was to shift the position of the pivot to fit the situation when the shank was placed below the shank attaching member.

Q. In other words, you took the Graham 798 structure and worked backwardly to see what kind of changes you might be able to dig up on some structure to make the 798? A. In this instance that wasn't the way it was really done. I had previously suggested a good part of this structure many years ago, and what I sat down here to do was to see if there was in the prior art any one or more structures which would fit into the picture which I had developed, at least in major part, back in 1951, without the benefit as of that time of thinking of it in terms of prior art.

Q. Of course you have already testified that the structure you had in mind then was the Graham 811 with two bolts through the shank and the fulcrum plate with the shank still on top or above the fulcrum plate. A. That was the detail of the structure then. The general terms of it were to fasten the shank to the fulcrum plate and the question of putting the pivot point above instead of below the pivoted structure.

Q. Now you are describing a new model that wasn't the one that you had in the first Graham case? A. No, I am describing the general considerations which [749] were carried out in a specific simple form in that model, which only incorporated part of it. It did not incorporate the change in the pivot point, although that was certainly discussed at that time.

Q. Then it would be quite difficult for you to reconstruct the Jeoffroy device merely to move the ears upwardly and rearwardly and still pivot the fulcrum plate? A. Oh, it wouldn't be too difficult, but that was not the idea that we had in this instance. You could put them up there and put corresponding ears straddling the shank if you were going to leave it just that way, somewhat after the fashion that the Rix ears straddle the other portion of the pivoting member and carry them up there. If that was all that was wanted. But that was not what we were doing.

Q. Now, if you were going to move these ears upwardly and rearwardly, the fulcrum plate would still be below the shank? The ears on Rix do not straddle the shank, do they? A. No, I didn't say they did. I said as they straddle the other device, but you could put them here so that they would straddle the shank if you wanted to do that; but that was not what we were doing with it in this instance.

Q. You wouldn't find any advantages in making that one [750] change, would you? A. Oh, there might be. Actually that was a change which was suggested to permit of some of the others, more to fit in with them rather than as a particular step in and of itself.

Q. Now, when we consider the Rix structure, particularly the forces acting on it, we wouldn't find any need to move the ears upwardly and rearwardly if we merely turned this thing down to where we would have the same relative forces, the ears would still be underneath and the shank would be above the fulcrum plate, wouldn't it? A. Well, we get to forces both ways and in all of these structures at one time they are one direction and another time they are another direction. It is true that in one instance we may be putting it so that the rebound forces are in the direction of the working forces in the other situations, but that is not the controlling factor at all.

Q. When we consider the forces that result from the actual pulling of the device through the ground and the direction of those forces in the Rix structure, if you would turn that so that the plate of the hinge member was horizontal then the shank would be above the fulcrum plate, so if we are going to change the Jeoffroy structure we don't [751] need to move the ears upwardly and rearwardly, do we? A. Well, if you were going to do it that way, if there were some other way, that is possibly correct.

Q. That would be following the teachings of the Rix patent, wouldn't it? A. No, I don't think necessarily.

Q. Isn't that the teachings with the particular forces that are applied, and all, to put it in the same general relationship and orientation, when you start to incorporate a part out of the Rix patent into the Jeoffroy SC-580 structure? A. No. In my opinion you are stressing one facet of it, which happens to be true, and disregarding all the other arrangements which, as I see it, are much more natural. That is, you will have the beam member and the fixed member and it would be much more natural to me, if I were going to do it, to simply turn the structure as a starting point of the part that we are following, and it would certainly indicate the teaching to turn the portion in Fig. 1 ninety degrees clockwise and then we would have a situation quite comparable to what I have shown, and that certainly seemed very logical to me, and under that circumstance you may have some difference in application of forces. Of course you have a change when you turn it 90 degrees, but that certainly seemed [752] logical to me rather than to try to make some force analysis and put it in an unlikely position in order to maintain a particular force arrangement.

Q. In your design work then you don't make force analysis and try to follow the tried and true force arrangement in the other devices that you might be following the teaching of? A. Well, that is pretty complicated. We of course consider forces but we don't figure, in working from one structure to another, that the force of direction must be the same at this point and the same at another point when it might just as well be reversed and give us a satisfactory result.

Q. Of course now if we only have the Jeoffroy structure and the Rix structure before us, that is what we have here on this chart, Defendants' Exhibit 24, and I would assume that we are following the teaching of those two devices to perform some modification. Now, is that your theory? A. That is correct, and I think that we are. We take either Fig. 1 or Fig. 3—well, I am mistaken, it is Fig. 2 and Fig. 3 of Rix and we just turn them 90 degrees clockwise.

Q. And reverse the application of the forces that are applied to them in their operation? [753] A. It is going into a somewhat different detailed tool application and if the detail of the force arrangement shifts I don't think that that is the controlling factor when that otherwise would require a rather severe structural rearrangement.

Q. And of course when you had the Graham 798 patent before you, that was a simple modification that you can make in those two structures? Is that right? A. Well, if that was the way it worked out that might well be it, and if you had these two structures before you, as I had them, it would be a quite simple modification, even without the Graham structure.

Q. Now, of course we have another structure before us, Mr. Fishleigh, the Glencoe structure. Now we can take the Jeoffroy structure, the ears depend from the fixed member, that is the same as we have in the Glencoe structure, isn't it? A. That is right.

Q. We don't have to move those ears, do we? A. Quite similar.

Q. So we don't have to move the ears in the Jeoffroy structure very much there, do we? A. Not a great deal.

Q. Now we can take the Rix structure without reversing the forces and take the plate to the hinge member and the [754] shank, where the same direction of force is applied, the loop would be above the plate portion and the shank would be above the plate portion, just like we have in Glencoe, don't we? A. If we did it that way, and then you would have it in the relative position of the shank with respect to the beam and the fixed member and the hinged member, you would be reversing that, so that would be quite contrary to the teachings of Rix.

Q. But we have still used the same forces, we have merely taken the device with the same application of forces and placed it in the Jeoffroy structure and we end up with Glencoe? A. Well, stressing the same forces and disregarding the structural arrangement you could arrive at that and if you then had Glencoe that would be what you would have would be Glencoe, and that is it.

Q. That would be a rather simple modification of structure to follow the teachings of those two prior devices, wouldn't it? A. Well, that depends, I presume, on the viewpoint. No more simple to me, where you turn over the entire structure, than to put it in the way we have talked about here.

Q. And of course if we had the Glencoe patent in issue [755] here it would be very simple then to make that change from the Rix and the Jeoffroy structures, wouldn't it? A. It is possible.

Q. Of course with that change to make the Glencoe structure we would still have the shank in the same relative position of the fulcrum plate and fixed member as we had in Jeoffroy to start with, wouldn't we? A. Yes. But different to what you had in Rix.

Q. But the same application of forces as we had in Rix? Is that right? A. In certain details, yes.

Q. Now, you show this reconstructed device in the lower right-hand corner of Defendants' Exhibit 24? A. Yes.

Q. And I believe you have a claim with a number of "yeses," that is Claim 1, I believe, isn't it? You have "Yes" all up and down for each element, so that device finds a response to each element of the Graham Claim 1, is that right? A. Well, I think I pointed out in that connection that it does with a broad construction of certain of the elements following the construction of the application that has been followed here in an attempt to find response in the accused structures.

Q. And your chart shows that you found each element, you [756] have "Yes" in this column along the right-hand side of the breakdown of the claims? You have "Yes" in each one of those? A. That is right, construing them in that broad way that the plaintiff construed them to find response in the accused structures.

Q. Now then, you also have "Yes" on each element of Claim 2 so that you find response in this structure you reproduced at the lower right-hand corner of Defendants' Exhibit 24? A. Yes, with that limitation that I have mentioned.

* * *

The Court: Court will be in recess until 10 o'clock in the morning.

(Adjournment.)

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[757] MORNING SESSION, WEDNESDAY, MAY 9, 1962

CLARENCE T. FISHLEIGH resumed the stand and testified further as follows:

Cross-Examination by Mr. Gold (Continued.)

Q. Mr. Fishleigh, you have read the Cockshutt record, haven't you? A. Not in detail, no, sir.

Q. You have read it sufficiently to know that the District Court and the Court of Appeals of the Fifth Circuit had all the facts regarding the prior art that is before the Court here, didn't you? A. Well, I am not certain as to that, but I think they had the same material, whether they had the complete facts I am not sure.

Q. In your opinion was the Glencoe device invention over the prior art? A. I have made no study of that, sir, as to whether there was any patentable invention in it, and I haven't had before me the complete prior art as it was applicable to Glencoe. I am not prepared to answer that.

Q. Considering the prior art that we have before us here, in your opinion would the Glencoe device be invention? A. On a broad basis—of course we wouldn't think so. [758] Whether there are some portions of it, some details that would be inventive, I am not certain, and certainly not, as I haven't considered the structures as disclosed in the Rolf patents.

Q. In your opinion was the Hunter device invention over the prior art?

Mr. Morris: Your Honor, I think I am going to object to the continuous examination along this line. The ultimate question of invention is certainly a question of combined law and fact for determination by the Court. It requires the application of a statutory test. It requires the application of the tests as laid down by the courts, and whether or not a given witness, Mr. Fishleigh or any other witness, can apply the entire statutory test and the tests laid down by the courts or is applying such a test or such tests seems to me to be far beyond the realm of proper expert opinion.

The question of invention, validity and infringement are combined law and fact questions. Now, they are not the same thing, what a skilled artisan could do or what the art shows or the functioning or operation or even the existence of mechanical elements, it requires the exercise of the final determination of the ultimate issue that this Court is going to be [759] called upon to decide.

The Court: I would think so.

Mr. Gold: Apparently Mr. Morris is objecting to the use of the word invention. Maybe I can rephrase the question and ask Mr. Fishleigh if in his opinion the Hunter device would have been obvious to anyone skilled in the art in view of the prior art that we have before us.

Q. (By Mr. Gold) Can you answer that question, Mr. Fishleigh? A. I am inclined to think that it probably would have.

Q. We have Defendants' Exhibits 24 and 25 on the easel. Yesterday we were discussing Defendants' Exhibit 24 to some extent. I believe that you stated that you would want to turn the Jeoffroy shank and attaching member over so the shank would be under the plate. Is that right? A. I didn't understand the whole question.

(Question read.)

A. Well, it would—from one approach it would amount to that. What I said was that I would mount it in the way that Rix did, with the plate between the shank and the fixed portion of the frame member. That in effect amounts to turning the plate and shank over so that the plate is above the shank.

[760] Q. Of course we could turn the Rix structure 90 degrees to the left as well as 90 degrees to the right, couldn't we? A. Yes. It would still be the same. The plate member would still be between the fixed member and the frame and the shank.

Q. Of course in that case it would be above the shank? I am sorry—the shank would be above the plate member? A. Well, if it were put—structurally it would be above but the plate would still be between the shank and the frame member. If it were so lined up that it could be satisfactorily made to work that way.

Q. Then of course the ears on the plate member would be downwardly so that the pivot pin in that instance would be below the shank, wouldn't it? A. Yes, but still on the opposite side of the plate from the shank and toward the fixed member.

Q. That would be down like it is where the ears are in the Jeoffroy SC-580 clamp? A. No, because if we were going to make that arrangement it would necessitate that we would have turned the Jeoffroy structure over to be working on it, too. If we were going to assume that situation.

Q. And of course that is just merely assuming some kind of positions without regard to any application of forces? [761] A. Well, this latter part certainly is.

Q. You want to disregard the application of the forces in all your modifications that you have suggested in Exhibit 24? A. Oh, I don't think it is a question of disregarding them, but not accepting those as the one sole controlling factor. Naturally forces would vary, depending on what you do with it.

Q. But you would make your modification and reverse the application of the forces to the shank and plate member? A. Yes. I would make my modification in line with the structural arrangements and if it happened that there was a change of forces so that the force on one was at a little different time than it was at a previous time and vice versa, I wouldn't be particularly disturbed by that.

* * *

[763] Q. (By Mr. Gold) Look at Defendants' Exhibit 25. On that chart you are showing the work that would be required to redesign the 811 structure to make the 798 structure, aren't you? A. Well, I have shown certain modifications which could be made in the light of the prior art, and if they were made it would come out with a structure which was quite similar to 798 and would provide a response to the mechanical elements of the claims.

Q. I believe you said here in a note in the center of your chart, "Use the Graham 2,493,811 mounting M including the fixed member 41, shank attaching member 63, pivot pin 62, coil spring 66 and rod means 71." But you didn't say anything about how you would move the ears on that structure, did you? A. I don't think it was mentioned, but it would of course be done in the same manner as we talked of before. That is, the ears would have to be shifted to place the [764] pivot pin in the proper place for the pivot pin when the shank was turned over.

Q. At least that is what you have done in the modified form that you show down in the lower right-hand corner, you have moved the ears upward and rearwardly? A. That is correct.

Q. In other words, you did it exactly like you did in the Jeoffroy SC-580 clamp on your Defendants' Exhibit 24? A. Substantially so, yes.

Q. Now then, you are going to take the Petersen patent, the teachings of Petersen, I guess, to make a modification of this 811, is that right? A. Yes, the teaching of putting the fulcrum member or hinged member between the shank and the fixed member.

Q. Now of course if we are going to do that we ought to take this whole hinged member from Petersen and put it over in Graham 811, shouldn't we? A. Oh, I don't think so. That isn't what I suggested, that you use that particular shank member. I am saying that that is the basic teaching of Petersen, to have the hinged member between the shank and the fixed member, and without substantial modification—in other words, put it another way, following the teaching of Petersen we simply turn the shank and hinged member of 811 over.

Q. In the 811 structure the forces acting on the shank at [765] the rear of the fulcrum plate are upwardly or in a direction opposite to the engaged faces of the shank and the fulcrum plate? A. That is correct.

Q. I believe we agreed that in the Petersen structure the forces acting on the shank would be in the same direction as in Graham, in a direction opposite to the engaged faces of the shank and the hinge member plate? A. At the back end, that is correct, in that position.

Q. And that was also true of the forces as applied to Jeoffroy, they were just like they were in the Graham 811, weren't they? A. Quite similar anyway, yes.

Q. And that was true in the Rix structure, the forces on the shank were in a direction opposite to the face of the plate member engaged by the shank? A. Well, these situations are all true at one time. But at another time in the course of operation the forces could be and probably would be just the reverse of what you are talking about.

Q. You are talking about rebound forces now? A. Yes.

Q. But we are talking about the forces supplied as you are plowing and the rearward pull on the shank as in 811? A. In just normal, easy plowing, shall we say, that is true, [766] but as I say, in the course of the type of operation that is expected in such plows that is the basis for putting a spring clamp on such a device, under those circumstances then there comes a time when the forces are just reversed from what you are suggesting.

Q. Of course these other structures of Petersen, Jeoffroy, Rix, and we can actually include Cobb in that, can't we? Now I show you the Cobb on Defendants' Exhibit 11. We can say the same thing about the forces of Cobb as we have mentioned on these others? A. Yes, at one time they are in one direction and at another time they are in another direction.

Q. And in each of them they would have the pulling force in the plowing that would be applied in one direction, the rebound would be in the opposite direction? A. That is correct.

Q. And whichever force we are considering, the forces—the direction of these forces is in the same direction relative to the engagement of the shank and the plate in the rebound—in the regular pulling stress or forces, they are all in the same direction, then when you have your rebound they are all in the opposite direction and each one of them is exactly alike as far as those directions, aren't they? A. Well, I would hesitate to say exactly alike, sir. They [767] are quite similar in that respect.

Q. As far as direction of forces they are not exactly alike? A. I have some doubt they are precisely alike, but certainly in general that is correct.

Q. Now then, we will look at Glencoe. Glencoe also has the same direction of forces applied relative to the engaged faces of the shank and this hinged plate member, so that in the plowing the force is in a direction opposite from the plate, upwardly actually in the illustration you have, your rebound of course would be down, but that is the same relative direction we had in the Graham 811? A. Well, there again that is probably too broad a generalization. At the left-hand end of Glencoe in normal plowing the force would be up at the right-hand end of the shank as we see it there. I believe the force would be down, naturally would, it would never open the clamp.

Q. But the force at the rear of the hinged member, which I believe you understand we have been talking about, that force would be away from this face of the plate? A. At the rear.

Q. Yes, sir. A. It would be away from it at that particular point, not [768] at the point where you run your pencil, and that is why I took exception to it.

Q. And that is the same relative direction that you have in Graham 811, Petersen, Jeoffroy SC-580, Rix, and also Cobb? A. Yes, sir.

Q. Now, when we apply the Petersen device in this hinge member into the Graham 811 and keep the same relative direction of forces, our modification of the Graham 811 would again be the Glencoe except that we would have a set screw in this upper part of the loop instead of the bolt 32 that you have marked on the illustration of Glencoe? A. Well, if you in effect disregarded the teaching—what to me is the more basic teaching of Petersen, and simply used Glencoe, then that is the way it would come out.

Q. You followed me as far as the moving of the hinge member of Petersen into the Graham 811, did you not? A. Well, yes. If you put Petersen in so that you no longer have the hinge member between the shank and the fixed member as taught by Petersen, then what you are saying I believe would follow.

Q. If we keep the same relative direction of forces that would be applied in Petersen, then you would have your modified structure like Glencoe? [769] A. I think it would be just that way. But in so doing you depart, in my opinion, from the teaching of Petersen.

Q. In the Deere 100 series I have here, Defendants' Exhibit 27-A, your force on your shank in the plowing is upwardly at the rear of the clamp? A. Yes, sir.

Q. And that is in a direction relatively toward the face of the hinged member? In other words, it would be the same relative direction of forces as you would have in a structure looking like the Graham 798? A. Well, if you will move your pencil as you were pointing again back to the proper point, I will say yes.

Q. So we will actually be looking at a Graham 798, in other words, the forces at the rear of the hinge member on the Graham 798 have the same relative direction as to the shank and the hinge member as is present in this Deere 100 series clamp? A. At the rear end of the clamp.

Q. And we can say that that same relative direction is also present in the Deere 650 structure? A. At the rear end of the clamp, yes, sir.

Q. So the two accused structures then have the same relative directions of forces at the rear end of the clamp as in the Graham 798, yet each of these examples of your prior art has an opposite relative direction [770] of forces? A. At that point, yes, sir, and under those conditions.

Q. I believe you said that in this Glencoe, while we would have an upward force on the shank at the rear of the hinge member, that in the forward portion of the shank, that part forward of the loop, that would have a downward force or toward the plate member? A. At the far end I think the force would be down and whether or not there would actually be any force tending to push the two together in between would depend a little on the structure.

Q. And in the Graham 811 structure, the force at the rear being upwardly along the part of the shank above the fulcrum plate, that part of the shank would have a force toward the face of the fulcrum plate? A. Well, at least the right-hand end of the shank, I believe, would have that force. That would be what would tend to compress the spring and open the clamp.

Q. And that would also be true of Petersen? A. Yes.

Q. And of Jeoffroy SC-580? A. Yes.

Q. And of Rix? A. That is correct.

Q. And we can also say it would be true of Cobb? [771] A. Yes.

Q. Now, when we consider these relative directions of forces, even Glencoe doesn't teach us that we should turn that plate and shank member over, does it? A. I don't think that Glencoe itself teaches that you should turn the shank member over at all, as such.

Q. You mentioned earlier about some model that you made or had made back in 1951 at the trial in the first Jeoffroy case, and you told us about ideas that you had at that time. Have you read the record as to a description of that model? A. Part of it.

Q. That model embodied some ideas you had in clamps, I believe you said, didn't you? A. Oh, I don't know whether I would put it quite that way. It was intended to demonstrate in court the operability, at least, of a structure when you made a fixed pivot for the hinged member and fastened the shank and the hinged member together to eliminate the so-called floating action of the 811 shank. That is as I recall it.

Q. I think that is correct, but I thought some of the other comments you have made about your ideas at that time were slightly different than this, so I think it might be desirable to put in the record what actually was said [772] about the description of that model.

Mr. Morris: Well now, I have no objection to putting the testimony in the record, but if you have in mind some impeachment of credibility here, some attempt to show that it is different, I want a predicate laid for what it is you say is different before it is offered on that basis. I object to it, if it is offered for the purpose of impeachment, as having no predicate laid.

Mr. Gold: We had some testimony that I think was indicating that he had suggested a clamp in a model back in 1951, that would lead him to some of the changes he has presented in Defendants' Exhibits 24 and 25, and I do not believe that the model described here is in accordance with some of his comments about it.

The Court: What are you going to ask him? About the model he describes in the prior case?

Mr. Gold: Yes, sir, I am going to ask him if this description is correct.

The Court: I think you should then read that testimony to him and ask him if he did testify thus in that case.

Mr. Morris: I certainly have no objection to it on that basis, Your Honor.

Q. (By Mr. Gold) This is a question at the bottom of the [773] page of 790, in Volume 2 of the printed record in the Jeoffroy Manufacturing, Inc., et al., versus William T. Graham and Graham Hoeme Plow Company, Inc., No. 14227.

Mr. Morris: Do you want to back up and get it in proper context and mention on 788 where he first described the changes which had been made?

Mr. Gold: I don't find what you have reference to.

Mr. Morris: Bottom of page 788, the last paragraph. If you will read it you will see he described the two changes he made just as he described them yesterday.

Q. (By Mr. Gold) In view of that we will start with the answer you gave at the bottom of page 788:

"ANSWER: In this device, I have changed it from the original form in two ways: I have fastened the bar representing the shank to the fulcrum plate; and in addition to that I have put a plate over the bottom of the—, I have fastened the shank to the fulcrum plate, and I have put a plate over the bottom so that we have a closed bearing instead of an open bearing where the fulcrum plate rides upon the pivot pin 62. By fastening the shank to the fulcrum plate I have eliminated any possible longitudinal movement of the shank with respect [774] to the fulcrum plate. And by putting a cap over the bottom in, in effect, a bearing cap, I have assured ourselves that the fulcruming will be about the fulcrum pin 62, as described in the patent.

"Your Honor will note that by applying force to the bar representing the shank that I get substantially the same type of pumping action as I get if anything a little smoother, a little bit more resilient pumping than I was able to get before; but as far as the pumping action and the movement of the shank, they are substantially identical."

Is that a complete description of that clamp, the model you had back in 1951? A. That is my recollection of it. I of course can't remember specifically if that was exactly in accord with my testimony, but I have no doubt of it.

Q. That is your testimony? Do you recall that that would be your testimony at that time? A. Well, that is my recollection of what was done to the model, and it is my recollection of what I said here about it yesterday, or the day before perhaps.

The Court: We won't pin you down on the days.

Mr. Gold: I believe that will give the same description I was going to read on the other page.

Q. (By Mr. Gold) Now, Mr. Fishleigh, with this Graham 798 device before you, it was rather simple to make the [775] changes in the various devices that you have proposed in Defendants' Exhibits 24 and 25, wasn't it? A. Well, that approach would have been true because a glance at this prior art shows that all of the features of the 798 are present and taught in the prior art and all that it amounts to is a little shifting around of some of those features.

Q. And you had the Graham 798 patent before you when you made these charts? A. I didn't have it before me. I knew about it when these charts were prepared in detail.

Q. You had studied it and were quite familiar with it at that time? A. Reasonably so, yes, sir.

Q. I believe you stated that the Graham 798 device would give the same plowing job as was obtained by the prior art. Now, did you mean by the prior art the same as the 811 and the Jeoffroy SC-580? A. Well, I think I was talking, that is, in general terms as to what one could tell in looking at it in the field or even watching it from a distance, and I would include, I believe, those two with it, that you got substantially the same type of action as far as you could see in the field.

Q. Of course you have already testified that you have never [776] seen Dunbar and Rix and Cobb and those operating in the field, haven't you? A. That is correct.

Q. Now, in this 811 structure— A. Might I say I should add perhaps to that list, and Glencoe.

Q. That you have not seen? A. No. To those that operate—as far as over-all final result is concerned, I don't think you could tell, by looking at a field or even watching the plow if certain parts were covered up so you couldn't actually see the clamps, which one was operating.

Q. Now, I believe you have seen the 811 structure in operation, haven't you? A. Yes, sir.

Q. And when you saw that in operation, particularly as you began to turn on a slight curve with the plow, there was a tendency for the shank to lay over or lean, wasn't there? A. My recollection of it is, and I believe I said the other day that I had noticed more sidewise movement in the 811 than in any of these others.

Q. In the 811 and in the Jeoffroy SC-580? A. Well, my recollection—it is some little time since I saw a Jeoffroy 580 in operation. My recollection is [777] that there was less of that in the Jeoffroy than there was in the Graham, but I am not positive of that.

Q. You do recall that in some cases they laid over rather extremely, don't you—particularly the 811? A.

Well, I don't recall it at the moment but I couldn't say but what perhaps that was true. I don't recall under some extreme condidtion that that was true. I have no reason to doubt it, however.

Q. Now, when I say laid over, in effect that would be lateral movement so that looking toward the direction of travel the back part of the shank would lean at an angle to the vertical, is that right? A. Yes, if I understand what you are suggesting, that the shank portion in the clamp could twist.

Q. Now, did you find that same tendency to lay over in the Deere 650 and 100 series? A. No, not in that extent.

Q. You have a reproduction of the Claim 1 on the top sheet or on a sheet that is stapled to Defendant's Exhibit 25, and Claim 2 of the Graham 798 is on the actual sheet, so that the Claim 1 overlies Claim 2, is that right? A. Yes.

Q. And in both instances you have "Yes" after each of the elements of the claims and those refer to a modified [778] form that you have in the lower right-hand corner of Defendants' Exhibit 25? A. They do refer to the structure as shown in my pictures in the lower right-hand side.

Q. In other words, it has the same relative arrangement as the reproductions of Claims 1 and 2 with your answers as to the elements that you had in Defendants' Exhibit 24? A. Yes.

Q. Mr. Fishleigh, we have placed the chart Defendants' Exhibit 28 on the easel. You have reproduced on that structure—on that chart Claim 1 of the 798 patent, that is, it is near the center of the chart, is that right? A. Yes.

Q. And you have lines drawn from the elements of that claim to parts of illustrations of the drawings of the Graham 798 patent to the left of the chart and that has some on a fly part that overlies some other drawings? A. That is correct.

Q. You have a part showing the Deere 100 series that is stapled to the main sheet of the chart and under that you have an illustration of the Deere 650 series, is that right? A. Yes.

[779] Q. Now, I notice that you have a column headed, "Is element found in Defendant's structure?" And in reference to that column on the fly part it shows the defendants' structure 100 series, and you have placed "Yes" for the introductory part of Claim 1 and the part you have numbered 1 you have also marked "Yes." That means that you have found that those elements do find a response in the defendants' structure, 100 series, is that right? A. Yes.

Q. Now, you will have in your element that is marked 2-A "No," is that right? A. Yes, that is what I have. I have a "No."

Q. That element calls for a fixed member, it is adapted to be fixed to a transverse member of the frame. The Deere 100 series has a part that you have marked yellow and it is adapted to be fixed to a box frame, isn't that right? A. That is correct.

Q. The element of the claim then continues that this fixed member has "a longitudinally extending underface terminating forwardly of the transverse member to which said mounting is adapted to be fixed." Now then, I believe that we have already stated in connection with the Graham 798 structure that that underface formed a [780] stop face so that when the spring urged the shank and plate member upwardly that would define what you called a home base position, is that right? A. Yes. I picked up the phrase home base position; would provide a stop to position it in normal plowing position.

Q. Now, in the Deere 100 series you have a hinge member that is colored dark green that you have numbered with a small numeral 8, is that right? A. That is correct.

Q. And the spring force is applied in such a manner that that member and the shank are urged upwardly so that there is an engagement of some faces that would tend to hold the shank in its home base or normal position? A. Yes, some faces.

Q. In this case you have a base on the dark green or hinged member that engages an underface of a beam, do you not? A. Yes, a relatively short face on the hinged member, which does engage one side of the lower face of the beam.

Q. And as far as those two faces that are engaged in normal position, they are corresponding? A. I am not sure that I quite understand what you mean.

Q. In the Deere 100 series the part that is engaged between this hinge member and this beam (indicating), there are corresponding faces on the hinge member and beam? [781] A. Well, I wouldn't quite put it that way, but that is of course a part of the face on the beam which is engaged. That portion of it does correspond in outline with that portion of the face on the hinged member. Actually if two things come together they contact on comparable areas in both members.

Q. Then your answer to my question is yes? A. I don't think it is yes, because the faces, considering the complete faces, are not corresponding.

Q. I believe my question was the engaged faces, Mr. Fishleigh. A. Well, even then a portion of the face which is engaged.

Q. Now then, also in Element 2 there are "Ears extending rearwardly from said underface at the sides thereof." There are ears on the Deere 100 series fixed member and it does extend rearwardly, does it not? A. Well, I haven't made a point in that, but they are the actual ears in the same sense as over in Graham, but there are extensions through the fixed member through which the pivot pin passes and I would make no complaint about it.

Q. You wouldn't want to call these parts that, call the pivot pin in the Deere 100 series ears? A. Well, I say I have not questioned it although there is [782] some degree of difference on it.

Q. There are the plate that extends upwardly at the rear of the bend and there are parts of that casting that extend rearwardly from that plate, aren't there? A. That is correct.

Q. And that wouldn't be called an ear? A. Well, as I say, it isn't in the same sense, in my way of thinking, but I have called it an ear and let it go at that.

Q. Its function is to have a hole in it to mount a pivot pin, isn't it? A. That is correct.

Q. And that is the function of the ears on the fixed member in Graham, merely to provide a place for a pin for pivoting this hinge member? A. Yes, I think that is true.

Q. And of course in Graham they wanted that pin above the shank and the pins above the shank in the Deere structure? A. It is above in both instances. I don't know what they wanted. That is what they show in Graham.

Q. So we have in this element 2 in Graham a face on the fixed member on the under side, in other words, that would be facing downwardly, wouldn't it? A. Yes, an underface.

[783] Q. And we have ears on the fixed member that mounts the pivot pin? A. That is correct.

Q. And in Deere we have a fixed member on a beam, but we have a downwardly facing face on this beam, and we have ears that are to the rear and above the shank on that fixed member to mount a pivot pin, is that right? A. Yes.

Q. If we moved or threw a bit of metal on the upper part of the forward end of the hinged member in the Deere 100 series, so that it would be sufficient to engage the flange on which the spring is seated, so that those would engage and could be moved, this little bit of metal that engages the beam, would that change the operation of that clamp structure? A. I don't believe it would.

Q. It would operate exactly the same way? A. Substantially the same, yes, sir.

Q. And your reason for putting "No" in this exhibit as to the element 2 is because the engagement of the hinge member is with the underface of the beam and not with an underface of the fixed member, is that right? A. Well, at that particular point my reason is that on the fixed member there is no longitudinally extending underface in the sense of the Graham patent. It is [784] true that later on it is pointed out that that underface is supposed to engage something else, but that does not find a response in my opinion in the sense that it is in the Graham patent.

Q. Now of course if we are going to talk about a longitudinal extending underface, merely take this element here, the fixed member has an underface under this flange on which the spring seats, doesn't it? A. Well, there is a face there of sorts. I don't believe that we could say that that is comparable to the face in Graham, and certainly as carried forward later on for its functioning it doesn't fit in the picture.

Q. Then you went ahead with the other elements of the claim and how they would function in considering whether or not you found a response for element 2? A. No, more particularly I went to the file wrapper and saw how that was described in the file wrapper at the time that this claim was put in and the basis on which it was said to introduce novelty into the claim, and I don't find that in this 100 structure.

Q. Then you were considering the function of the underface? A. Structure and function.

Q. If you were considering only what is specified in the claim and whether or not you could find the response to that element 2, you would have to say that if you didn't [785] consider the function that you would find an underface, wouldn't you? A. Well, if I were just reading that language as English language out of the dictionary I might find something that it could be in a broad sense applied to. But in the sense of this patent I don't find anything on the fixed member of the 100 series to which it can properly be applied.

Q. If we read the element alone, without considering function, we find a response in this particular part? A. Well, I don't read an element alone as English without considering its function in the structure to which—

Q. You also consider the function? A. Both the function and the structure.

Q. The function can be very important, can't it? A. It can be, certainly.

Q. And in this case you didn't find the same structure but you did find some parts that would serve that same function, didn't you? A. I found a different part on a different part which performed that same—in general terms, that same function.

Q. On the stop? A. Yes.

Q. So if we were considering the function we would have to change that "No" to "Yes", wouldn't we, as far as the [786] action that we have in the Deere structure and the action that we have in the Graham 798? A. Well, no. If that element read merely "Some stop means," then perhaps we would say yes, but as it is set forth there, considering the function and the structure, the answer is no, and of course that is particularly true when distinction was made from other stop means in the prior art.

Q. You mean a sliding type of stop means? A. No. A stopping type of stop means.

Q. I find you also have in the element No. 3, "A shank attaching member" and you have "No" there. If we take just that portion of the element, there is a shank attaching member in Graham and there is also a shank attaching member or hinge member in Deere, isn't there? A. Oh, yes, and in all the prior art that we talked about.

Q. We have in this particular case an elongated plate portion and Deere has an elongated plate portion on their shank attaching member, do they not? A. Oh, I think I would say yes.

Q. And it has an upper face, too, doesn't it? A. Yes.

Q. And that upper face corresponds with and normally is in contact with an underface that is in that device designed to be engaged by, right here where your number [787] 25 is on the illustration of the 100 series, is that right? A. Yes, a portion of that upper face of the hinged member is in contact with a portion of the lower face of the frame member.

Q. And element 3 continues, "A longitudinally extending underface." The Deere structure has a longitudinally extending underface, doesn't it, on the shank attaching member? A. Well, may I ask did you intend to skip the actual working of part of it there?

Q. I am not reading the element exactly, I am asking you about the response of the various parts of it. A. All right.

Q. And the shank attaching member of the Deere 100 series has a longitudinally extending underface? A. Yes.

Q. And it is in engagement with a corresponding upper face of the shank, this part you have colored pink, I believe, is engaged with the underface of the shank attaching member, is it not? A. Yes, sir.

Q. And the hinged member or shank attaching member in the Deere 100 series is between the shank and the fixed member, is it not? [788] A. Yes.

Q. Now of course we don't have any question about the means that connects this plate portion with the shank, that is this bolt, isn't it? A. It is the bolt and the portion of the strap member at the rear of the hinged member.

Q. You feel that both of them are necessary? A. Yes.

Q. You didn't have to have anything in the rear of the 650 series as shown on this same chart to have a light-colored green on it to respond to such a means, did you? A. No, because on that we said there was no such response.

Q. Then this particular part, this plate member, isn't essential to the operation of the 100 series is it? A. To the operation of it?

Q. Yes. A. Well, no, it operates without such a means.

Q. But regardless of how we interpret Claim 1, as far as element 4, we do find that there is a response in the Deere 100 series? A. Oh, I wouldn't go that far. I could imagine you interpreting it in many ways which wouldn't find a response. But when it is interpreted in a proper way, I believe there is a response to that piece in the 100 series.

[789] Q. Now, we also have another element, a transverse pin that you have marked element 5, and it pivotally connects the shank attaching member to the fixed member, does it not? A. Yes.

Q. In the Graham structure? A. Yes.

Q. And here is Exhibit 10 that you have colored blue in Deere to pivotally attach that shank connecting member to the fixed member? A. Yes.

Q. And in the Deere structure that pin is in such a manner that it is rearwardly of the contacting faces that form the stop, is it not? A. It is rearwardly of those faces which form the stop.

That is correct.

Q. It is rearwardly and upwardly, isn't it? A. Yes, somewhat.

Q. And the shank attaching member pivots upon the rocking movement of the shank in the Deere structure? A. Yes.

Q. So your marking that particular part "No" was because there was no fixed member right in front of the hinge pin that had a face that would contact the shank attaching member, is that right? [790] A. Well, possibly. Actually it was because, although the transverse pin is rearwardly of a couple of contacting faces which provide stop members, it was not at the rear ends of said normally contacting faces as described in the preceding elements of this claim.

Q. Of course if you wanted to put a little bit of metal under this fixed member—under the beam, on one-half of the fixed member so it would be right above this shank attaching member, you would have such faces and there would be no change in operation, would there? A. No, you wouldn't have such faces so long as you left it on the beam. You could change it very readily and come back to—

Q. You misunderstood my question, Mr. Fishleigh. I don't want you to misunderstand. I said if I took some metal and put on one-half of the fixed member so that that metal would extend under the beam and be above the shank attaching member so those faces would engage, then you would have contacting faces, yet the operation of the device would not be changed one iota, would it? A. Well, if you changed it over so that the upper longitudinal face of the hinged member did correspond with and contact an underface and a fixed member, then of course you would back up and would have a response to certain points. Now, in my opinion there would be no basic [791] change. I would hesitate to say to you that this wouldn't be changed one iota, but no substantial nor basic change in the operation.

Q. Will you tell me any change that would occur in the operation. A. Well, if that was all you did there you might tip it down, but as the thing is organized there, without doing anything more than you suggested I don't just see how you could get an operable structure without changing the adjustment of the plow. But perhaps you contemplate making other adjustments so that you would have something comparable to the 798.

Q. We have what appears to be a space—actually it looks like it is yellow on this chart, between the bottom of the beam and the upper face of the hinge member, and that is all the metal we put into it, showing that space would we change the operation? A. I suppose if you attempted to do that, no more than that, you would probably end up with an inoperable structure, if you attempted to put in such a face as that of this cast fixed member.

* * *

[792] The Court: Gentlemen, I think we might take a 5-minute recess.

(Recess.)

Q. (By Mr. Gold) Mr. Fishleigh, there is no question that the Deere 100 series has coil springs and therefore we can read element 6 of the Claim 1 on that device, can't we? A. That is correct.

Q. Now, in element 7 we have "Means having connection with the forward end of the shank and with the other end of the coil spring." We have a spring bolt in the [793] Deere 100 series and it does have a connection with the forward end of the plate member, doesn't it? A. Yes.

Q. And that spring urges the plate member upwardly so as to maintain a normal contact with the upper portion of the plate portion with the stop face designed into that structure in the fixed elements of the device? Is that right? A. Yes.

Q. And the purpose of that is to maintain the normal plowing depth of the groundworking tool? A. Yes.

Q. So we have a structure here that does provide the function as provided in the element 7 of Claim 1? A. Well, the ultimate result, yes, of maintaining the normal plowing depth of groundworking tool. That much of it in the structure device.

Q. In your notes you have stated that there is no means in Defendants' 100 series structure which is directly connected to the forward end of the shank, isn't that right? Isn't that your note? A. Well, I think so, if you read it correctly. This is right.

Q. The word "directly" was put in by you. You didn't find "directly" in element 7 of Claim 1, did you?[794] A. It isn't spelled out there, but that is what is shown in the 798 patent.

Q. When we are considering the scope of this means that would perform this function, we do have a spring bolt in the Deere 100 series that is connected to the forward end of the hinge member, which in turn is connected by a bolt to the shank member, so there is a connection really between the shank member and through the hinge bolt—I am sorry, through the spring bolt to the upper end of the spring? A. Indirectly through the hinged member.

Q. This element 7 doesn't say whether that connection is directly or indirectly, does it? A. It doesn't spell it out in that language. In a case of that kind I look to the patent and the specification to see—certainly in the sense of the 798 patent that is certainly not a literal response.

Q. I believe you said that this element was merely a single means element? Did you say something like that on your direct testimony? A. I don't know that I said anything about a single means element. It is what I call a means clause, in other words, specifying means for doing such and such.

Q. With the function? I think you added that also? A. Yes.

[795] Q. I believe you stated that it had no structure specified in that element. A. Well, I don't know whether I said that or not. I think at least as far as the thing being described, I think there is no specific structure. It does refer to other structures that it has connection with.

Q. The connection could be a structure then, couldn't it, so we can't say that this means clause has no structure in it? A. As far as the means being described, it is not spelled out in any structural definition.

Q. The means by itself, but it is spelled out that it does have a connection with the forward end of the shank and with the other end of the coil spring? A. Oh, yes. It refers back to structure previously mentioned in the elements of the claim.

Q. Then you don't consider the word connection has any significance as to structure? A. Oh, I wouldn't say that I didn't think it had any significance, but it doesn't describe any particular structure.

Q. Then we do have, through the connection of the spring bolt and the hinge member and this bolt that you colored light green, we have a connection from the upper end of the spring to the shank to provide the function [796] of maintaining the hinge member or shank attaching member and the shank in their normal position? A. Yes, there is that indirect connection as between parts other than specified in the—the connection between parts other than specified in the claim which does result in that structure being held in normal plowing depth of the ground-working tool.

Q. Of course you have shown on the Glencoe structure over here at the side and made some comments in a note that if we ignore certain features of the Graham 798 device of Claim 1 that you would have the elements in the Glencoe structure to correspond? A. I think that is so.

Q. In that note you disregarded relative positioning of the parts? A. Yes.

Q. And you also disregarded the direction of forces applied to the shank relative to the plate member? A. Well, yes, because there is nothing set forth about that.

Q. We have already brought out that in the structures, the direction of forces in the Deere 100 series and the 798 series are the same, but they are opposite from the Glencoe structure? A. That is right, at certain points and at specific steps [797] of the operation.

Q. You have, in applying your "Noes" to the various parts of the claim as shown relative to the 100 series, taken a very narrow view of any scope of the elements of those claims, haven't you? A. Well, I have taken as broad a view of the scope as I felt was justified in the light of the progress through the Patent Office, the file wrapper and the specification and drawings and the general state of the art, and in some instances, particularly the longitudinal face business of the stop face, I was guided by the fact that in the course of the prosecution certain things were pointed out clearly as not being what was described there, so that a least had set a point of departure for me.

Q. In your notes you have not brought out the parts of Deere that would cooperate to provide the same function as would be provided by the 798 elements of the claim, have you? A. No. In some instances I think I have said there is a part that does certain things, I believe I have, but differs in certain respects.

Q. In details? A. Well, details in one sense, and looking at it from the standpoint of the parts which carried the claim through [798] the Patent Office I would say they are tremendous mountains.

Q. As far as the actual operation of the structure of Deere 100 series they would be minor details, wouldn't they? A. Oh, important details, I would say.

Q. Important? A. Yes.

Q. Of course one thing we ought to do is to remove this little bit of material on the upper part of the shank attaching member that contacts the beam and put it up on the front of the shank attaching member so it will contact the underface of the part of the fixed member on which the spring seats, then we would have an underface of the fixed member, we would have an upper face of the shank attaching member that were contacting, wouldn't we? A. We would have a portion of the face if we did make that change.

Q. And they would form the stop? A. That is right.

Q. And the operation and function of the Deere 100 series would still be the same as if provided with the structure that is here in issue? A. At least quite similar, yes.

[799] Q. Now, we have turned the fly part over so we have the illustration of the 650 series of the Deere structures, and now we are going to look at the "Yeses" and "Noes" that are on the main sheet of the exhibit, aren't we, in reference to the 650? A. Well, I don't know what you are going to do.

Q. That is, where you have the yeses and noes as to the 650 series? A. That is correct.

Q. And in this Claim 1 relative to the 650 series in both the introduction and the element marked 1 you have provided "Yes", that you do find a response, haven't you? A. Yes.

Q. Now, in the fixed member in element 2 you have provided a "No". Now, in reading that element it specifies a fixed member and Deere does have a fixed member that you have colored yellow, doesn't it? A. Certainly.

Q. It is adapted to be fixed to a transverse member of a frame, isn't it? A. Yes.

Q. And does that fixed member have a longitudinally extending underface? A. Not in the sense of the Graham patent and for the [800] purpose there set forth.

Q. It does have an underface that I am pointing to with my pencil that is above the heads of the bolts that hold the parts to the fixed member? A. That is correct.

Q. It also has an underface on the bottom of this lug that you have designated with the numeral 44 at the forward end of this structure, doesn't it? A. Yes, it has a small bottom to the lug.

Q. So then we should say that the 650 series does have an underface, doesn't it? A. No.

Q. This also specifies that this underface terminates forwardly of the transverse member to which said mounting is fixed. This underface on the lug 44 in the 650 series is forwardly of the transverse member? That would be the square beam, wouldn't it? A. That is correct.

Q. And of course the forward end of that face would be terminating forwardly of the transverse member? A. Well, the whole thing is forwardly of it. That whole lug is forwardly.

Q. So it naturally follows that the forward edge of it would be terminating forward of the other transverse member, that is obvious, isn't it? [801] A. I certainly wouldn't understand that that is applicable language in a case of that kind.

Q. You would have difficulty in applying that particular description to that face of the lug? A. Yes, although the facts are clear enough. The lug is forward of the transverse member of the frame as the plow operates.

Q. You know, if the Graham 798 structure in the embodiment illustrated in the drawings were to have some additional metal that would be added upwardly from the rear part of what you colored yellow and come up to the top plate over the H-beam so as to form a housing-like structure, would that change the operation or the purpose of that structure at all? A. I don't think so.

Q. We have already determined that these ears are merely to mount the pivot pin, aren't they, on the 798 structure? A. Yes, that is the purpose of them.

Q. And merely adding some more metal in there might add a little bit more strength, that would be about all it would do, wouldn't it? A. Well, functionally that might be, but it might change any description of the matter.

Q. Now, of course in the Deere structure we have some metal added above the boss to which the pivot pin [802] extends, haven't we? A. Well, we have to have a part there. We don't particularly have it added there. That is the construction of it.

Q. That would give some strength around this part that mounts the pivot pin, wouldn't it? A. That is correct, and also provide other functions.

Q. Of course this boss that we have here on the Deere 650 series is toward the rear of the fixed part, isn't it? A. That is correct.

Q. But the fact that we have made more metal to box that in instead of having it—this other part cut out, then you say we don't have any ears in the Deere structure, is that right? A. I think that is a fair statement of it.

Q. So therefore that is the reason why you put "No" after the element No. 2? A. Oh, that was only, as I say, a minor portion of it. It is there as a statement of the difference, the basic difference was on the matter of the longitudinal faces which are not there in the sense of the Graham structure.

Q. Of course in both cases the ears are an integral part of the casting that we have called the fixed member in the Graham 798, aren't they? A. Well, the ears are and the support for the pivot pin is an integral part of the structure.

[803] Q. And we have bosses on the 650 series that are an integral part of the lower half of the 650 series, do we not? A. That is right.

Q. As far as the function of mounting the pivot pin, the Deere 650 series provides that same function that would be equal to the function of the mounting of the pivot pins in the 798 structure? A. Well, mounts the pivot pin, yes.

Q. You wouldn't want to say it would be equal as far as function? A. Oh, in that sense, as far as whether it is better or worse from other points of view, but certainly they both support the pivot pin satisfactorily.

Q. So in the Deere 650 series we do have a fixed member, it does have an underface, and the underface is forwardly of the transverse member, and it has pivot pin mountings which serve the same function as ears, whether you call them bosses or ears wouldn't make much difference, so we should change that "No" to "Yes" here on element 2, shouldn't we? A. No.

Q. To be fair about it? A. No, we would be most unfair if we did, because even in your statement of it you omit some of the more important [804] and critical parts and of course we never should look at language entirely aside from—divorced from the specification and file wrapper, and for that matter, prior art of a patent.

Q. What parts did I leave out that you are particularly concerned about? A. Oh, you just said an underface, left out the "longitudinally extending," for example, and left out the—whether or not that part that you are pointing to in any way is similar to the underface that is considered or referred to in Graham, and whether it would be even adaptable for the same function.

Q. Now, let's take the word longitudinal. If we consider the surface at the lower part of the lug marked 44, from the front edge of that lug to the rear edge, that would be longitudinal of the shank, wouldn't it? A. Oh, certainly.

Q. And that would be in the same direction as is referred to as longitudinal in describing the underface of the fixed member of Graham, wouldn't it? A. That is correct.

Q. So we do have a longitudinally extending underface in the Deere 650 series? A. No, not in this sense. You have a part which has a little length that way, but if you are going to talk [805] about that face at all, or describe it, it would be transversely extending.

Q. It would also extend longitudinally though, wouldn't it? It would extend both directions? A. Any surface has two dimensions, but certainly if you are talking about a surface and a direction it extends, you don't talk about its shortest dimension and disregard its longest dimension. In the sense of what that means and as it was pointed out how far it is, I wouldn't say that that came under it at all.

Q. In your answers, Mr. Fishleigh, very, very frequently you have mentioned about something in the description of an element of the claim as being in the sense of the Graham 798 structure. When we talked about this underface you again mentioned it. But when we consider the sense of the Graham 798 structure we should consider the purpose of it, shouldn't we? The purpose is the sense of it, isn't it? A. Well, that is only half of the story. That is, if this Graham 798 stood out as a milestone by itself, then perhaps what you are saying is true and it might be entitled to a broad range of equivalents, but when, as we see here, the difference between what was not patentable and that which became patentable is restricted almost entirely or primarily to certain [806] specific things, then you can't disregard them and talk purely of function, because for things to be equivalent it is not, as I understand it, just mechanical equivalents, it is not at all enough that they perform the same function or the same job.

Q. They should perform it in substantially the same way, shouldn't they? A. And they should be similar structures, and the range of that depends—

Q. Of course now you are getting into a legal opinion here, aren't you? A. Well, I have been taught that the question of equivalence, it is true, it is set forth by the Court, but it is said that it is a question of fact to be determined, amongst other ways, by expert opinion.

Q. Now then, let's consider the face that we have on the Deere 650 series on the lower end of the lug, and its purpose. It is a stop face, isn't it? A. That is correct.

Q. And the face on the fixed member, this lower face we have been talking about in the Graham 798 structure, is a stop face? A. That is correct.

Q. Both to perform a function in connection with letting something engage it to hold the tool in a normal position? [807] A. That is correct.

Q. And when we actually consider the words in element 2 without going into the so-called sense of the Graham patent which you have been referring to, we do then find that there are a number of faces that can be called longitudinally extending underface in the Deere 650 structure, don't we? A. Oh, I think if you take the language of that element and look up word for word in some dictionary or even the best dictionaries, that you could perhaps—that is, if someone described or could describe the 650 series and refer to some surface and describe it that way, I think that perhaps is true, considering it not as an element of a claim in a patent, but as mere verbiage, I think you probably could find several such places that you could find a—could describe it.

Q. Of course we should look at the teachings of the Graham 798 patent with the same broad scope that we should look at the teachings of the prior art, shouldn't we? A. Well, if I am thinking of it as to what it might teach me, but if I am thinking of it as to what portion of that teaching belongs to Mr. Graham rightfully, then it is a vastly different subject.

Q. Then you want to narrow it down to detail of a specific [808] illustration of the embodiment? A. No, to what advantage, if any, Mr. Graham made over the prior art.

Q. Now then, we do of course have a shank attaching member in the Deere 650 series, do we not? A. Yes.

Q. And it has an elongated plate portion? A. I think that is correct.

Q. And it has an upper face? A. Yes.

Q. And it also has a longitudinally extending underface? A. Yes.

Q. And the underface is in engagement with the corresponding upper face of the shank? A. Yes.

Q. And the plate portion is between the shank and the fixed member? A. That is correct.

Q. Now if we would extend this plate portion out to the forward end of the shank and then cut your lug 44 off so it would engage the upper face of the plate portion we would not have changed the operation of the Deere 650 series device, would we? A. Oh, you would have changed the detail but it would still undoubtedly plow satisfactorily. [809] Q. It would just be moving the face of the stop here, be the reverse of what Deere did, I imagine, merely cut off this face and extend the lug down so as to have engagement to perform the stop against that shank, would that be about right? A. Well, I don't know that I know or knew at any time. I certainly don't recall that Deere did that.

Q. But with either structure the operation would be the same, the same results, same manner of plowing? You wouldn't have changed the operation of this device at all, would you? A. Not materially, no, sir.

Q. And that is the reason that you have marked "No" on element 3 is because this lug has been extended down and the face cut off, instead of having the plate member extend out and the lug engage the top of the plate member? A. Well, my reason for saying no is because there is not in the Deere structure any parts which provide that —that respond to it.

Q. If we made this minor change of extending this plate portion forward and had the lug engage the top of the plate portion, then we would have to change that "No" to "Yes"? A. Oh, no. No, because in the first place I have never [810] agreed with you that the bottom face of that lug could be said to be a proper response to element 2 or to part of element 2, and likewise if you did have it contact the rear end of the hinged member, that that would have a face—that that shank attaching member would then have an upper face corresponding with and normally in contact with said underface, that regardless of that it would not be the same.

Q. Because this face then under the lug 44 wouldn't be running throughout the length of the plate member? A. Well, yes, it would be a longitudinally extending face in the sense of Graham, it would be even smaller than the face which was—pair of faces which were distinguished in the file wrapper, in which they clearly said, This isn't what we have got.

Q. Do I understand your testimony that in the sense of the Graham patent, that the longitudinally extending underface would have to be the extent of this red line that you have shown on Fig. 2 of the Graham drawings on Defendants' Exhibit 28? A. That is what it is in the Graham structure. In another structure I don't believe that it would have to be precisely that, but it would have to be such that it was in fact a longitudinally extending face and somewhere between that and the situation which was distinguished [811] from in the prior art.

Q. Then we can shorten up this red part in the Graham when we read it onto some other structure then? As far as getting response in these elements of the claims, the underface can be much shorter? A. Can be some shorter, certainly. I think there comes a limit to it and I am quite certain that this structure shown in this 650 series is beyond that limit.

Q. If we would shorten it up one half of what is shown on Graham would that be all right? A. Oh, I think somewhere in that neighborhood would be—

Q. If we shorten it up to one-fourth of the length would that be all right? A. I am not prepared to say just where. I think you are getting very close to it. I think it is a very nebulous distinction, but nevertheless that was the distinction made over the prior art and certainly when you get down to the length of the stop members, as they existed in the prior art and are distinguished from, then that certainly is the limit and that is somewhere in the neighborhood of a quarter, I would say, of this, somewhere between a quarter and the full length would probably be all right.

Q. It is your position then that the distinguishing feature of the Graham 798 patent that made it allowable [812] in these claims was this longitudinally extending under face? A. Well, that was the most emphasized and most repeated item.

Q. It was mentioned, of course, in the argument with the examiner, but was that the distinguishing feature? A. Well, as I recall it, that was very much emphasized both in the mechanical elements of the claim and in the argument.

Q. But you are not in a position to say whether or not that was the distinguishing feature? A. I think that was the primary distinguishing feature.

Q. There could have been a number of distinguishing features between the claims and the prior art then? A. Oh, there could have been some other feature. That was the one which was emphasized.

Q. Now, we do have an arrangement here in Deere 650 that does perform the stop so as to hold the shank in its normal position in response to the urging of this claim, don't we? A. Yes.

Q. And we do have contacting faces that form that stop? A. Yes, on the shank and on the bottom of the lug, small faces.

Q. Now let's take element 4 and read it and compare the [813] words with the structure in the Deere 650 series. "Means connecting the elongated plate portion with the shank for maintaining the upper face of the shank in constant continuous contact with the underface of said plate portion of the shank attaching member." We do have a bolt that you have colored green in the Deere structure, do we not? A. Yes.

Q. And it does maintain the shank in contact with the plate? A. Not throughout and not through all working conditions.

Q. Well, we have to have this member back here, No. 7, on the fixed member to support the shank in the Deere structure? A. Well, that does not maintain it in constant continuous contact, that simply prevents it from moving too far away so as to cause a rupture.

Q. Then it is your position that in the Deere structure there is a space between the shank and the hinged member, we will say, back towards the rear part of it ? A. At certain times, yes.

Q. And therefore the bolt doesn't hold the shank up in contact with that plate surface? A. That is right, not in constant continuous contact.

Q. Does the element of the claim give any extent of that [814] contacting surface? A. Well, it says that the upper face of the shank and the bottom face of the hinged member are in contact. That certainly to me implies throughout their length.

Q. That implies that to you but— A. And that is what is shown, of course, in the drawings.

Q. You mean in the Graham 798 drawing? A. That is right.

Q. However, in any quantity manufacture I believe that you indicated that you at least would make the hinge member of Graham out of a casting? A. I think I indicated that I personally would disregard the teaching of the Graham patent. But if one wanted to follow a teaching of that sort you adapt the tolerances to fit the teaching, not adapt any old tolerances and let it depart therefrom. Now, to accomplish what is suggested there I believe you would need rather close tolerances.

Q. You would have to machine the hole through the loop part or stirrup part of that shank attaching member then? A. I think you very well might.

Q. The specification in the Graham 798 structure doesn't say it is machined, does it? A. No.

[815] Q. Of course we have a surface on the fixed member that engages the bottom surface of an H-beam in the illustration and it shows contacts all the way across, doesn't it? A. Yes.

Q. So I assume that by your interpretation we would have to machine that surface also to have contact? A. No, not if there is no special reference to it. But here there is definitely a reference and it is shown as the same type of contact from end to end.

Q. Of course this is shown here too (indicating) and it has contact? A. That is right, but there is nothing in the specification nor in the elements of the claim that refer to having a constant continuous contact between those surfaces. If it did and is shown that way then certainly I would expect it to follow that that contact would be co-extensive with the extent of the surface.

Q. And of course you would assume that we would have to have the underface of the fixed member also machined, wouldn't we, in the Graham 798 structure? A. Well, not necessarily.

Q. You wouldn't machine it then? A. It might very well be sufficiently smooth for the purpose. There again it doesn't specify and there is [816] rather precise and extreme language that we have in the other situation where you call for constant continuous contact.

Q. And of course the bolt at the forward end of the Deere 650 structure does maintain a constant continuous contact with the forward portion of the shank and the plate member? A. At the part right under the bolt, yes.

Q. So we do have constant continuous contact, as you would put it, of a portion of those surfaces? A. At a small portion, yes.

Q. So it is due to your particular very limited interpretation of the words "the upper face" and "the underface" that causes you to put a "No" for the fourth element of Claim 1, referring to the Deere 650 series? A. Well, I wouldn't put it that way myself. I don't think it is mine. I think it is simply the definition and interpretation of those as set forth, I would say the inescapable—

Q. But your interpretation of the upper face and the underface means it would have to be the entire faces that are in engagement? A. Yes, these faces that are previously mentioned, that those faces do contact and not that some little part of some face contacts with some little part of another. [817] But of course in this instance there isn't a contact of even any portion of comparable faces.

Q. We did have (indicating)— A. Oh, excuse me. I was thinking you were referring back to the other. That is correct.

Q. So we will be clear, I am talking about the fourth element and the words "for maintaining the upper face of the shank in constant continuous contact with the underface of said plate portion," and you have interpreted that to require, due to the fact that the words "the upper face" are used and "the underface" are used, that you have to have complete contact along the entire base between the shank and the plate member? A. Yes, as shown in the patent, and no other suggestion made for any departure therefrom.

Q. In making your drawings for your illustration did you try to make your drawings to scale? A. Not precisely.

Q. And there could be errors in them? A. Well, I know that there is a matter of clearance that is not shown on this drawing which—

Q. You showed the upper face of the shank in constant continuous contact with the lower face of the hinge member on that illustration, did you not? A. Yes.

[818] Q. That is what is shown there? A. That is right.

Q. Now we go on to this transverse pin in element 5. A. That is, it is shown in complete contact at that point. This drawing, of course, doesn't show anything about constant contact from a time element during the operation or whether under that time element there would be continuous contact. But at that point it does show continuous contact.

Q. Now, in view of that comment, let's consider the sense of the Graham 798 patent. Isn't it part of the objects of that patent to mount the shank so it would retain the resiliency of the shank? A. Of the shank?

Q. Yes. A. Yes.

Q. So the shank could flex? A. That is right.

Q. That is one of the purposes, isn't it?

The Court: Gentlemen, I think it is about time to recess. Court will be in recess until 2 o'clock.

(Noon Recess.)

[819] AFTERNOON SESSION, WEDNESDAY, MAY 8, 1962

CLARENCE T. FISHLEIGH, resumed the stand and testified further as follows:

Cross-Examination by Mr. Gold (Continued.)

Q. Mr. Fishleigh, just before the noon recess I was asking you about the Graham 798 structure and in the sense of that patent isn't there indication that the shank will flex? A. Well, I had worked on the assumption that the 798 patent didn't change the characteristics of the shank, but I don't find that statement, at least I didn't in looking through it just before the recess. If you can refer me to it I will be glad to—

Q. Did you go on the assumption that it will flex in a similar manner to the 811 shank? A. Well, not particularly the 811, but any shank of this type. I find some references to resiliency, but it seems to be as provided—seems to me to be as provided by the spring clamp that is mentioned here.

Q. Doesn't the third paragraph, Column 1, also indicate that "the shanks may rock when necessary and vibrate under action when the plow is working in rocky or heavy soils"? [820] A. Yes. But I don't interpret that as a specific reference to any action of the shank per se as distinguished from the flexible spring clamp.

Q. Wouldn't vibrate imply a flexing? A. Well, it might just as well be a movement of the spring clamp as of the shank itself, although I had assumed that it would act as other such flexible shanks.

Q. Of course then the wording that I read, it does say "the shanks" and it indicates that the shanks vibrate. That would indicate that the shanks would vibrate substantially the entire length, wouldn't it? A. Well, I think it is intended they would, but I think this reference, actual reference in the patent is to the action of the spring clamp rather than the shank per se.

Q. The Graham 811 shanks would flex substantially through their entire lengths, would they not? A. Well, certainly from the clamps down to the point.

Q. Also in the part above the plate member? A. They might.

Q. If there is flexibility substantially the entire length of the Graham 798 shank there would also be flexibility for substantially the entire length of the shank in the Deere 650 structure, would there not? A. Well, there would be from the clamp to the end of the [821] tool, or that is, to where the shank fastens to the tool. Certainly there is flexibility in that part of it.

Q. My question was if there is flexibility substantially the entire length of the Graham 798 shank then there would also be flexibility for the entire length in the Deere 650 structure? A. I don't think there is any necessary relationship as between the two. It doesn't—there either is or isn't in Deere irrespective of whether there is in 798, but I am saying that I think the flexibility of any consequence is in the portion from the—well, from the contact point with the hinged member to the end of the shank.

Q. Then you couldn't say that if there is flexibility in the portion of the shank under the plate member in Graham 798 that there would also be flexibility in the Deere 650 structure in the portion under the plate member? A. I don't think that one follows the other at all, if there is any relationship between the two.

Q. There could be a difference then in their action in your opinion in as far as flexing? A. Oh, there can be, yes.

Q. Now, I believe that we had started to go to element 5 [822] a little earlier, element 5 on Defendants' Exhibit 28, you have also applied a "No," but you don't find that element in the Deere 650 structure? A. Well, I think we perhaps discussed that and there is, of course, a transverse pin, but it is not at the rear ends of said normally contacting faces, as called for in that element.

Q. Of course you do agree that the Deere structure does have a transverse pin? A. Yes, certainly.

Q. And it does pivotally connect the shank attaching member to the fixed member? A. Yes.

Q. At the rear of the fixed member, rear portion of the fixed member? A. Well, toward the rear of the fixed member, yes, not at the rear but toward the rear.

Q. And that would be rearwardly of the contact of the shank with the underface of the lug 44, wouldn't it? A. Yes, sir.

Q. And that pivotal connection by the transverse pin is such that the shank attaching member in the Deere 650 structure pivots upon rocking movement of the shank? A. Yes, sir.

Q. So the function of the transverse pin, the fifth element [823] of Claim 1, is performed in the Deere 650 structure then, isn't it? A. Well, part of the function.

Q. Just part of it? A. Yes, sir.

Q. There is some function that is not performed? A. Well, it pivotally connects the shank attaching member to the fixed member, but its location is not as specified here in this fifth element, because insofar as the pivoting is concerned it does permit pivoting of the hinged member.

Q. Permitting the pivoting of the hinged member is the function of the pin, isn't it? A. Yes, sir.

Q. So the function is performed by the pin in the Deere 650 structure? A. That function of pivoting is performed.

Q. Going back to element 4 I notice that you have a note here at the right-hand side of the breakdown of claims and you state in the second paragraph of that particular note, "The Bolt 41 is the only means in Defendants' structure for connecting the Shank 12 to the Hinged Member 35. The Bolt 41 does not maintain the Shank and the Hinged Member in constant continuous contact along their entire corresponding faces during all stages [824] of operation." Now then, in putting in the part there about "along their entire corresponding faces," that was your language, wasn't it? A. My understanding of what the language in the claim element means.

Q. The words "their entire corresponding faces" is not present in element 4 of Claim 1, is it? A. No, that specific language is not there.

Q. Now, as far as the coil spring, element 6, you have indicated that you do find that coil spring in the 650 series? A. That is right, there are two of them there, but I don't think that affects it at all.

Q. Of course where we say "a coil spring," you have two coil springs, and of course you do have a coil spring in two instances, don't you? A. I don't think in this instance it makes any difference. I have seen cases—in fact in the last case I testified it made a good deal of difference whether in a situation of that kind you said "a coil spring" or "at least one coil spring." But I don't believe in this instance it makes any particular difference, although it could under other circumstances.

Q. Now then we have a 7th element, "Means having connection with the forward end of the shank and with the other [825] end of the coil spring," and of course that is the spring bolt in the 650 series, is it not? A. That is right.

Q. And it does have connection with the other end of the coil spring? A. Yes, coil springs.

Q. And it does have connection with the forward end of the shank? A. That is correct.

Q. Then you still have "No"—in that particular part, if the actual element and the connection is there you know then it would be because of the faces that we have been referring to before, yet you don't agree as to the rotation of the contacting faces? A. Yes. Had the element stopped where you stopped in reading it I would have had no question, I believe, in saying yes. But it goes on to add some very specific language in addition to that and in view of that additional specific language, which is not applicable to 650, I said no.

Q. Of course that additional language is "whereby the spring yieldably maintains said normal contact of the upper face of the plate portion of the shank attaching member with the underface of the fixed member to maintain the normal plowing depth of the groundworking [826] tool." A. That is right.

Q. And as to this particular means in applying it to the 650 structure, the spring does yieldably maintain contact of the shank with the lug, with the underface of the lug 44, to maintain the normal plowing depth of the groundworking tool, doesn't it? A. Yes, sir.

Q. Now, as to your note, on the site of the arrow directed to the Glencoe structure are comments that you made on the over-ride, which you have below the illustration of the 100 series, substantially applies to your notes in the part below the 650 series, wouldn't it? A. Well, as I recall it, at least my comments I believe would have.

Q. Mr. Fishleigh, you were asked on direct examination about a Defendants' Exhibit 8-D, which I believe you stated was a copy of Claim 7 from the 798 file history.

* * *

[827] Q. (By Mr. Gold) Do you have a copy? A. I have a copy.

* * *

Q. Now, in that breakdown that you have of Claim 7 you have five elements numbered in the claim, do you not? A. I don't have it. This was just handed to me, but there are five elements listed here.

Q. And there are seven elements in Claim 1 of your breakdown of Claim 1 of the patent, as shown on Defendants' Exhibit 28? A. Yes. They are numbered somewhat differently. I show an introduction in element 1, where this is not numbered, and then I believe the balance of them correspond reasonably well.

Q. And in your breakdown of Claim 2 you also had seven elements, did you not? A. I think so. Yes.

Q. In your breakdown of Claim 1, as shown on Defendants' Exhibit 28, you don't have a separate numbered element for the longitudinal extending underface, do you? A. I didn't have, no.

Q. And that would also be true of your breakdown of Claim 2, would it not? [828] A. That is correct.

Q. Now, I have placed on the easel Defendants' Exhibit 29. As far as the drawings of the Graham 798 at the left of the exhibit they are duplicates of what you had on the Defendants' Exhibit 28, are they not? A. I believe they are, yes, sir. Yes, I am sure they are.

Q. And a drawing of Defendants' structure 100 series that is to the right of the claim is a duplicate of what you had on the fly sheet or cover sheet on Defendants' Exhibit 28? A. Yes.

Q. Now, looking at the claim, which is Claim 2, with reference to the 100 series, you show the introduction as found in that structure, do you not? A. Yes.

Q. And the element that you have marked 1, the mounting, starts "A mounting," you found that element also? A. Yes.

Q. Now, the element you have numbered 2 you have marked "No." Let's consider that element. It starts out "A fixed member," does it not? A. Yes.

Q. Actually this particular element that you have numbered 2 is identical in wording to the element 2 of Claim 1, so wouldn't our comments that we had in considering [829] element 2 of Claim 1 relative to the 100 series also apply here? A. I am sure that my comments would.

Q. The wording is the same, is it not? A. I am quite certain that it is word for word the same.

Q. Now then, we will take the third element. You also have a "No" marked after it, don't you? A. Yes.

Q. That element says, "A shank attaching member having an elongated plate portion provided with an upper face."

In the Deere 100 series you do have a shank attaching member, it has an elongated plate portion, and that plate portion has an upper face, does it not? A. Well, it has a couple of other faces, but it has a portion which could be said to be an upper face.

Q. And it has an upper face that corresponds with and is normally in contact with an underface of a member that cooperates with it to form a stop, isn't that right? A. Well, not entirely. A small portion of one of the upper faces does come in contact with a small portion of the underface of the beam member to form a stop. That much is true.

Q. And as far as the engaged part of it, that would be a corresponding base on the two parts, wouldn't it? A. Well, yes. The small portion of the upper face of the [830] hinged member, which does come in contact, does correspond with that portion of the underface of the frame member with which it is in contact. That is correct.

Q. Now, this element also specifies "a longitudinally extending underface." The shank attaching member does have a longitudinally extending underface, does it not? A. Yes.

Q. And that underface is "in engagement with a corresponding upper face of the shank whereby the plate portion of the shank attaching member is between the shank and the fixed member," isn't that right? A. Yes.

Q. The element then says, "Said shank attaching member having a lug." The shank attaching member in the Deere 100 series does have a lug, does it not? A. Yes.

Q. It extends upwardly between ears on the fixed member? A. Oh, I think we could agree to that, yes.

Q. Then your Fig. 1, you show that lug portion behind this ear on this side, don't you (indicating)? A. That is right.

Q. And in Fig. 4 that would be the lug portion between those ears, would it not? A. Well, it is between that portion of the fixed member. [831] As we said this morning, there is some question as to the proper nomenclature, but it is the support for the pivot pin and I made no point of it, I am sure.

Q. Now, it is disposed adjacent to the rear end of the plate portion and above the plane of the underface that is engaged by the plate portion upon the stop? A. Well, it is toward the rear end of the plate portion. Yes, I would say it was at the rear end of the plate portion, but not above—what did you ask me? Above what?

Q. The plane of the face engaged by the plate member to form a stop. A. Yes, above the plane of the lower face of the beam member.

Q. Which does form the stop on which the plate member engages? A. Yes, against which the plate member engages.

The Court: You are talking about the hinged member?

Mr. Gold: Yes, sir.

Q. (By Mr. Gold) This claim element then says, "said shank attaching member having depending means embracing the shank at the rear end of said plate portion." I believe in your direct testimony you said that there was a response of that part in the Deere 100 series, [832] did you not? A. Well, I believe I probably did, but I will say it now if I didn't.

Q. So actually in that case you have applied "No" to the element because of the particular stop faces that are used in the Defendants' 100 series? A. No, I wouldn't put it that way. I have said "No" because of the absence of the particular stop faces which are called for in that element, as I believe my note at the right probably points out.

Q. That is because there was, as you say, no surface on the plate portion of the hinged member that engages a face of the fixed member, isn't that right? A. That is correct, as called for in that element of the claim.

Q. And it is for that reason that you have applied "No"? A. Yes.

Q. Now, as far as the function of those stop faces, they do have—they are to provide a stop so that the spring will urge the plate and shank up to a normal position, isn't that right? A. Yes. We have a stop function performed by structure other than that which is called for in the elements of the claim.

Q. And as we stated relative to the 100 series when we were [833] comparing Claim 1 with it, if we removed this this little bit of metal here on the plate portion of the hinge member and placed it up on the upper end at the forward end of the hinge member so it would engage the underface of the fixed member below the part that the spring seats on, then you would have an engagement that would stop and the structure would still perform in exactly the same manner? A. Yes, but I don't believe that I agreed that under those circumstances we would even then have a proper or complete response to these elements.

Q. Of course we did say that this was an underface of that portion of the fixed member, did we not? A. Oh, I think we agreed that that was an underface.

Q. And the upper face of the forward end of the hinge member could be said to be an upper face on that hinge member, could it not? A. I would be inclined to say that in line—to describe it in line with some other description

I have seen as being the upper face on a beak member, beak portion of the hinged member.

Q. If you add a little bit more metal on this so there would be engagement and remove the metal here under the beam you would have a stop which would be provided by an upper face of a plate portion of the hinge member [834] with the underface of a portion of the fixed member? A. Yes, if you changed it from what it is to something different and made that something different correspond to what you say, that would be true.

Q. And if we kept the engagement such that the shank, when those faces were engaged, would be in the same position as shown in your Fig. 2, the operation in plowing would not be altered from the operation of the particular structure you show in these illustrations, is that right? A. Well, the operation in the plowing, as far as you could observe, probably would be somewhat the same. The wear on the structure might be somewhat different and somewhat different from what is shown in the Graham patent.

Q. Having the stop portions here on the forward end of the hinge member would cause more wear than what we would have with the stop faces as shown in the drawing? A. Certainly than is shown in the drawings in the Graham patent, yes.

Q. I am asking about the Deere 100 series. A. I don't think there would be too much difference there, depending upon the relative nature of the frame member and the fixed member.

Q. Then changing the stop to that forward end of the hinge member wouldn't change the pivotal action of the shank or the hinge member, would it? [835] A. I don't believe it would, essentially, assuming that you kept it so that it didn't change it.

Q. And it wouldn't change the action of the bolt 13 that connects the hinge member to the shank, the forward end? A. No.

Q. And it wouldn't change the function or the operation of the spring and spring bolts, would it? A. No.

Q. So all those parts then would act the same, regardless of which place you had the stop portions? A. Substantially I think, yes, sir.

Q. I find that you do indicate that in this claim you do have the bolt in element 4 in the Deere structure and have marked "Yes" after that element, haven't you? A. Yes.

Q. I notice in the fifth element, again the pivot pin, you marked "No," but there is a pivot pin present in that Deere structure? A. Yes.

Q. Extends transversely through the lug on the shank attaching member? A. Yes.

Q. And it is carried by the ears of the fixed member? A. That is correct.

Q. With the axis of the pin above the plane of the underface [836] that forms a stop on this particular clamp? A. Yes.

Q. And the function of that pivot is to permit the hinge member or shank attaching member to pivot, isn't that right? A. That is right.

Q. And these contacting faces that form the stop on the pivoting of the hinge member would immediately move out of contact with each other, would they not, on the rocking movement? A. Of the shank and hinged member, yes.

Q. In other words, there wouldn't be any sliding action, they just plain separate, don't they, when the forward part of the hinge member rocks downward? A. Well, they separate like any two members which are evident about the common point. It is a rotary separation as distinguished from a linear separation.

Q. We do have a pivot pin in the Deere structure and it does have a function except again you put "No" because of the location of the stop faces? A. Well, yes, because it doesn't fit in with the language which has been put in here. If this language wasn't important and wasn't in here, then—in other words, if the element were different than it is now we might very well have found a response to it.

[837] Q. Then your answer is that it was actually due to the location of these faces that you have put "No" on

that element? A. Well, it is due to the fact that the pivot pin is not so organized whereby the normally contacting face of the shank attaching member immediately moves out of contact with and away from the face of the fixed member. That is not present there and consequently I said "No."

Q. In the 6th element you show the coil springs present? A. Yes.

Q. In your 7th element, again this relates to the spring bolts or means that connect the forward end of the shank with the other end of the coil spring, and you have "No" there. Now, can you explain why you placed "No" on that element? A. Yes, for the same reason, because here once more after describing these means, which is the spring bolt, rather generally, it goes on and adds the fact that "Whereby the spring yieldably maintains said normal contact of the upper face of the plate portion of the shank attaching member with the underface of the fixed member." It specifically spells out the specific contact that it requires and that specific contact is not present.

Q. Then all of these "Noes" that you have placed after [838] the elements of the claim actually are there because a plate portion has a face engaging the underface of the beam instead of an underface of the fixed member? A. Well, because it doesn't have the underface of the fixed member in engagement with the upper face of the hinged member, as set forth in this claim, repeatedly injected it into each one of these elements.

Q. Now, was your answer any different than what I said in my question? A. Oh, I think it is.

Q. My question was, I believe, that the reason you have placed "No" in each of those elements is because the upper face of the shank engages the lower face of the beam of the frame and not a lower face or underface of the fixed member? A. My "No" has nothing to do with the fact that the upper face of the hinge engages the lower face of the frame. It goes entirely to the fact that there is not the engagement of the underface of the fixed member with the upper face of the hinged member, and I am sure that if I agreed to that you would find that it was different six months from now.

Q. In making a clamp in 1953 or '54, a structure such as shown in Dunbar was available, was it not? A. Yes. The teaching of it or the showing of it was. [839] I am not sure about whether or not there was such a structure.

Q. Deere could have made such a structure as shown in Dunbar instead of making the 650 series, couldn't they? A. As far as I know they could have.

Q. They could have also made a structure like in the Rix patent, couldn't they? A. That is right.

Q. They could have made a structure like is shown in the Petersen patent, could they not? A. Yes, as far as I know.

Q. And they could have made one like is shown in the Cobb patent? A. That is right.

Q. And they could have made one like is shown here in the Glencoe? A. I don't—that is, they could have made it, but whether they would have been free to make such a structure. I don't know that they would have. I haven't made a study of that. I know there are some patents covering that or later modifications. I haven't studied the detail of them.

* * *

[844] Q. Do you know about the survey that you made of the spring clamps in the field? A. I was here in court when such a survey was discussed. I have not read it. I have not read either one of them, but I learned here, and had heard about them previously, that there were such surveys.

Mr. Gold: Your Honor, I would like to introduce Plaintiffs' Exhibits O and P. Exhibit O is the file wrapper of the Rolf patent No. 2,739,518.

Exhibit P is soft copy of that same patent.

The Court: Very well, they will be received.

(Plaintiffs' Exhibits O and P were received in evidence.)

Re-Direct Examination by Mr. Morris.

Q. Mr. Fishleigh, we have all sat here now for something over a half day as plaintiffs' counsel has nimbly stepped through an attempt to apply the mechanical elements of the two claims in suit to the Deere structures, and I note that as we come to each crucial element wherein there is language of significance, that language has been avoided. If the language were given its application in the light of the prior art which existed at the time this patent was issued, and in the light of the Patent Office procedure under which this [845] patent was issued, and in the light of the specifications and the drawings contained in the patent, would any one of those elements which you testified about in your opinion be fairly applicable to either the Deere 650 or the 100 structures?

Mr. Gold: Your Honor, we would like to object to the question as being very leading.

The Court: I think the question is somewhat leading, and very general.

Mr. Morris: Your Honor, I can go through the tedium the same way that we have had it here, step by step, item by item. I had hoped to avoid consuming that kind of time.

The Court: The Court wishes that you could too. It is obvious what the witness's answer would be.

Mr. Morris: The answer would be so obvious. But that is all right. I will come at it in another way.

Q. (By Mr. Morris) Mr. Fishleigh, looking at the prior art as existing at the time this application was filed, that is the 798 application, and looking at the specifications and drawings from the patent and to the file wrapper history, do you think that under any stretch of the imagination the frame member of the plow could be construed to be an element of the clamp? [846] A. No, except as for the environment as it is indicated in the introduction.

* * *

[847] Q. (By Mr. Morris) Considering the same factors, Mr. Fishleigh, that is, the state of prior art, the disclosure of the specifications and the drawings of the patent and the proceedings in the Patent Office, do you think that under any reasonable interpretation the depending lug element of the Deere 650 clamp contacting an upper face of the shank itself could be construed as mechanically the same thing or substantially the same mechanical thing as a contact of the longitudinally extending underface of Graham 798 with Graham's longitudinally

extending upper face of the hinge member? A. I do not. [848] Q. Mr. Fishleigh, there are a few specific things I would like to direct your attention to and get them out of the way before we go ahead with some of the other matters. May I have the prior art chart with the Carter disclosure on it?

Mr. Fishleigh, I have placed on the easel Defendants' Exhibit 19, which contains a group of prior patents and prior public uses, one of which is Carter. Yesterday you were asked some question about Carter on cross-examination, particularly with reference to how that device would pivot. Have you had an opportunity to study the Carter drawings overnight and look at that particular question? A. Yes, I have given further thought to it.

Q. All right. From looking at the drawings further can you explain to the Court how the pivot would occur in that structure? A. Yes. We have already pointed out that the perspective in Fig. 2 is not particularly good perspective and I believe the same thing applies to Fig. 1, that there would be on the upper—in fact, it tends to show in Fig. 3 in the lower left corner that where you had a pin—

The Court: Pardon me, are you talking about Fig. 3 shown in the other diagram? It doesn't show on [849] this—

Mr. Morris: No, it is shown in the patent, Your Honor, in the book of patents, Exhibit 5.

A. Well, there is shown a pivot "L" running crossways of the hinged member with a connection to the main body at the center of that pin, and looking at the Fig. 3 and also Fig. 1, which of course is shown, it looks to me as if there were a couple of fingers straddling that portion that extends from "L" back to the main body so that there would be a pivotal action, but that even though shown in the drawings, that those fingers would not interfere with the tilting action.

Q. To demonstrate that more clearly and understandably, assume that my hand here with this pencil between my fingers represents the portion called the pivot block in Carter. Then a fixed member which is attached to the frame upon which that member pivots, if it had two fingers catching over the tops of the extension, the two extensions of the block, is that what you are saying would be the place it would pivot? A. Yes, as indicated perhaps in the bottom part of Fig. 3, just below the letter "J".

Q. In the particular view that is shown on our chart here which is Fig. 1, and is in part a cross-section of that particular device, is the device drawn so that you can [850] look behind and see the pivotal fitting? A. Well, I think it is intended to be, although the delineation as of 1880 is not the way that we certainly would draw it today.

Q. All right, sir. Now then, Mr. Fishleigh, as an engineer, not just you but as any engineer, in looking at the drawings and interpreting the drawings, are you dependent upon what accompanying specifications there might be to tell you everything that there is shown in those drawings? A. No, not everything. There are many things which drawings in and of themselves show.

Q. Is it a common and ordinary procedure to omit those routine, usual things which would be readily understood to those people versed in the trade? A. In patent drawings you mean?

Q. Yes. A. Yes. In fact, very frequently in instances of that kind those common features are shown diagramatically merely by a rectangle, and you assume that the person in the art to whom the patent is addressed knows what is meant.

Q. Mr. Fishleigh, you were asked a number of questions concerning these prior art disclosures as to whether or not they related to harrows and cultivators as [851] distinguished from chisel plows. Is there anything in the 798 patent that tells you anything at all about the size of the tool involved? A. No.

Q. Is there anything about the fact that the particular device is in the harrow or cultivator art that confines its mechanical teachings to that art? A. No, sir.

Q. As an engineer, taking a particular structure and a particular spring clamp structure used in the harrow and cultivator art, do you feel that it would be within your capacity to transfer those structures into some other type agricultural implement and apply their use? A. Yes, wherever such action was needed and if it involved greater forces to increase the strength and size of the part accordingly.

Q. If you have a workable structure in a light implement, such as harrows and cultivators, is the problem of transferring to heavier tools primarily one of size and strength of tools to carry the particular force loads which they will be called upon to carry? A. In most instances, yes, unless some unusual conditions are to be encountered which might change it.

Q. Yesterday you were asked what was the function of the rear support web or the rear web portion of the Deere [852] 650, and I believe at that time you stated that it was to control the shank on rebound or recoil action. Does it have any other function, Mr. Fishleigh? A. Yes, it does.

Q. What is that, please? A. To provide a supporting strut to strengthen the fixed member, to strengthen the two side flanges of the fixed member.

Q. To provide lateral support for these two side flanges? A. That is correct.

Q. In tools of this sort, from your own observation, are there substantial lateral forces that would tend to force the shank to one side or the other? A. There are at times, yes, sir, very substantial.

Q. Now, you were asked a long series of questions about bending of the shank and flexing of the shank, and I would like for us to be absolutely certain that we don't have any conflict or misinterpretation of the two terms. Now, as I understood your testimony, you are using "bend" primarily in the sense of distorting the thing beyond its elastic limits so that it takes a permanent set and does not return, is that correct? A. Well, yes, I had used that certainly as a general basis.

Q. On the other hand, the matter of flexing and returning [853] to its former position you have called the resiliency of the shank, is that correct? A. Yes.

Q. That is the sense in which they have been used here? A. That is correct. I am not absolutely sure that they have always been used that way, but I think that is the way that I have used them.

Q. Now, in the 798 patent I wish you would refer to column 2 on the first page of the specifications, the sentence beginning in Line 21: "The bar stock is shaped to provide a substantially straightened portion"—wait, that is not the reference I want. Yes—I am too far down. The same column, the sentence beginning in Line 17: "The shank 2 is formed of metal bar stock of substantially rectangular cross-section and is of a width and thickness to provide the necessary strength and a certain amount of resiliency." Do you find anything else in the specifications which gives any specification as to size of plow shanks or as to any other size of the parts of these plows or of these claims? A. I don't recall any at all.

Q. Do you find any other reference in the specifications which would indicate what it is that gives the resiliency to the shank other than the size of the bar stock from [854] which it is formed? A. No.

Q. Would that apply equally well to bar stock a quarter inch thick and two inches wide as it would to bar stock three quarters inch thick and two inches wide? A. Yes.

Q. Or to bar stock an inch thick and two inches wide? A. Yes. The amount of flexing or resiliency for a given load might vary, but at least the same fundamental teaching would be there regardless of the detailed size.

Q. Do you find anything in the patent at all which would confine these clamps to an application in a so-called chisel plow as compared to a cultivator or a harrow implement? A. No.

Q. Now, you were asked a great many questions about bending or flex of the forward end of the shank up inside the mounting or clamp between the point of pivot and the point of forward attachment of the bolt or forward attachment of the spring rod. Do you find anything in the specifications, the drawings, the file wrapper history, or the claims of this patent, which would suggest at any place that there is a bending or flex of the shank of any consequence whatsoever in that area? A. No, I don't. In fact, I find the contrary in the [855] elements of the claims, where they provide that the shank shall be held in constant continuous contact with the plates or hinged member, which would indicate the converse of bending.

Q. I believe you pointed out in connection with Fig. 6 of the patent drawings, Defendants' Exhibit 21-C, as set out on Defendants' Exhibit 21-C, which shows the clamp in a pivoted or rocked position, that the shank and the hinge member are in continuous contact throughout their entire length, is that correct? A. Yes, that is consistent with the requirement in the mechanical element of the claim.

Q. And if there were any bending of consequence to be emphasized or with which this patent was attempting to deal, would that be one of the points at which in your opinion the flexing would be at its maximum, if there is any? A. Yes, and should certainly be shown diagrammatically in such a view.

Q. Now then, you have been asked—well, let's just stop right there. In your opinion, Mr. Fishleigh, from studying these structures and from observing operation, is any tendency to flex which there might be in the forward portion of the shank within the clamp structure itself of any significance or consequence whatsoever [856] to the operating function of these structures? A. No, sir.

Q. These spring steel shanks of the sort which are used in the agricultural tools of this type, I am holding one here in my hand, which happens to be a Cockshutt shank, but is it representative of the types of shanks which are used in these plows? A. Reasonably so, yes, sir.

Q. In that type of spring steel shank, in the curvature here to the rear, extending from the groundworking tool around the curve up to the point of attachment to the clamp member, is there a deliberately designed resiliency? A. Yes.

Q. Is that the intent of that long curved area of the spring steel bar stock? A. That is correct.

* * *

[857] Q. * * * From the particular shape and design of that type of spring steel shank where, in your opinion, would it be likely to have significant flexing action? A. From the rear end of the clamp to the lower end of the [858] shank.

Q. Now, you were asked a long series of questions about direction of flex or bend and relative direction of flex. I would like for you to take any one or all of these structures that I am going to outline here now, Graham 811, Jeoffroy SC-580, Glencoe, Graham 798, and consider the direction of flex in the shank itself, assuming that there is some, is there any difference in any of those structures of the direction of flex insofar as the shank itself is concerned? A. No, sir.

Q. Could you demonstrate that, please? Could you point it out how that is true? Put whatever drawings are necessary on the stand to work with. I believe we have 811 and 798 already there. Let's put Jeoffroy 580 and Glencoe on the easel. A. Well, in all cases if a sufficient load were encountered, the point of the tool would be moved backward and there would be a tendency to flex along the line that I am now indicating, considering the portion in front of the—or that is, behind the clamp. That would also be true in Graham 798 and it would be true here in Glencoe, and if as a result of the stressing there is any tendency to flex or any actual flexing, although it is my view that while there may be some tendency the actual [859] flexing will be very small, a matter of at most a very few thousandths, that would tend to be a curve as I am showing it, in each one of the cases, and the reason that that is possible is that in a structure such, for example, as Glencoe, and there is enough clearance in that commercial structure so that when the shank moves against the top of the opening through the loop 29 it gives ample clearance space for any bending which actually does occur in such a shank.

Q. In each of these examples—incidentally, I believe you did not mention the Jeoffroy SC-580 structure but if we had the shank exposed here, curved downwardly from the drawing, Defendants' Exhibit 18, would the same thing be true that you have just mentioned as to the other three? A. Yes.

Q. Now, in each of these structures, 811, 798, Glencoe, Jeoffroy SC-580, Mr. Fishleigh, is the force on the plow tool and in turn on the shank rearwardly and upwardly while it is in the ground? A. Yes.

Q. Is there a downward force provided either at a pivot pin or at a portion of the clamp which operates downwardly onto the shank to resist the upward and rearward thrust on that shank? [860] A. Well, there is a resistance at that point.

Q. All right, let's call it resistance. A. Not an active, aggressive force to push it down, but to resist upward movement.

Q. To resist the tendency of it to come upward? A. That is right.

Q. And is that true whether the pivot pin is located above the shank as in 798 or below the shank as in 811, Jeoffroy SC-580 and Glencoe? A. Yes.

Q. And on the opposite side of the fulcrum point, whatever it be, whether it be some other portion of the clamp or the pivot pin itself, is there in turn an opposing force furnished by the spring and its attachment which opposes the tendency of the shank to be forced upward at the rear? A. Well, upward and rearward. That is actually a rotary movement around the fulcrum or pivot point.

Q. Around the fulcrum point? A. Yes, sir.

Q. So it is true then we have an upward force tending to pivot the shank around whatever its pivot point may be and on the opposite side an upward force which tends to oppose that force which tends to rotate it? A. That is correct.

[861] Q. So that the resultant bends or flexes in the shank, regardless of which of the clamps it may be, would be of the same direction insofar as the shank itself is concerned? A. That is correct.

The Court: I would like to ask one question in that connection. Is it your testimony or is it your opinion that the stresses applied in each one of these devices on the shank and throughout the entire length of the shank, wherever it may be, would be the same regardless of whether the shank were located above the fulcrum plate or below?

A. Yes, sir.

Q. Would it make any difference as to the distribution of that strain? A. I don't believe it would, at least of any important consideration. There might be some slight difference that one could determine in a laboratory which might give a slight variation, but from a practical standpoint I don't believe there is any practical difference.

Q. Passing on to the further consideration of the point along the lines the Court has just inquired about, assume that there is a tendency in the shank to flex between its forward portion, between its fulcrum point and its spring tension. In each of the structures [862] we have just gone over, 798, 811, Jeoffroy SC-580, and Glencoe, would the direction of flex in that portion of the shank itself, if there is any, be the same? A. Yes.

Q. In answer to Mr. Gold's question I believe you pointed out that the loose type of construction was sufficient to provide the necessary clearances for whatever tendency to flex there might be in that structure? A. That is my opinion anyway.

Q. And you have just testified in connection with Glencoe that in your opinion the clearances through the loop element again would be sufficient to provide whatever—to accommodate whatever tendency to flex there might be in the forward portion of the shank, is that true? A. That is correct.

Q. Will you indicate to the Court, please, in the particular Glencoe hinge member, which we have here, the clearances you are talking about. A. Yes. As I look through above the shank and between the shank and the loop I can see there is quite a substantial space there, and if it is loose it can be moved or even though tight at the other end if there is sufficient forces to tend to flex the shank, the shank can move up that amount and the amount of the bending which would occur between the bolt and the loop [863] could take place in there without restriction by the hinged member.

Q. Is there anything whatsoever in the record pertaining to 798, either its specification, its drawings, its claims or its history, which would indicate any provision for clearances at all? A. No.

Q. Is there anything—assuming there were some, would there be anything to indicate any clearances any greater than here in the Glencoe structure? A. No.

Q. Is there any basis then in the claims, the specifications, the drawings and the file wrapper history, to assume that there is a provision for flex in the 798 structure that is not fully accommodated in Glencoe? A. No.

Q. Do you find one single word in the entire history of 798, again all four places, the history, the specifications, the claims, or the drawings, which says anything whatsoever or indicates anything whatsoever about a direction of flex of the shank relative to the hinge member in that forward portion? A. No.

Q. Is there anything in the file wrapper history at all or the specifications to indicate that the patentee was [864] addressing himself to a problem of that sort? A. No.

Q. Is there anything in the specifications or the claims or the history which tells you whether or not this structure would be a fabricated structure from steel or a cast structure from malleable or some other casting material? A. No.

Q. Turning our attention to another matter, Mr. Fishleigh, yesterday I sought to ask you whether or not the person having ordinary skill in the art could do certain things, and objection was leveled. We didn't pursue the matter further. Today on cross-examination Mr. Gold asked you this question: Would the Hunter 650 patent structure have been obvious to a person ordinarily skilled in the art? And I believe you answered that probably it would. I now ask you whether, considering the 798 structure at the time of its alleged conception in 1951, whether it would have been obvious to a person having ordinary skill in the art as of that date?

Mr. Fishburn: Your Honor, I want to object to that question. Just because Mr. Morris waived objection, that is no sign we are bound by that. If he didn't see fit to object to that question, that is not binding on us.

[865] The Court: That is probably true, but you asked him the same type of question.

Mr. Fishburn: That is all right. He should have objected to it, if he didn't like it he should have objected to it. He didn't do it. That doesn't preclude us from making the same objection, that it is improper.

Mr. Morris: Your Honor, I think these people opened this door wide open to what would be obvious when they inquired along those lines.

Mr. Fishburn: I don't agree, Your Honor, I can tell you an instance which happened right in this court, before the late Judge Otis, Mr. Scofield probably will remember it, where the same identical question happened, and Mr. Scofield also knows the late Arthur C. Brown, with whom I worked, and Mr. Brown let a question go by, let a piece of evidence go in without objection because he wanted to get the same thing in on his case. When it came time to do it, Mr. Scofield and Ray Watson, who has also now passed on, made objection. Mr. Brown says, "Well, they put it in." And Judge Otis said, "That makes no difference, you didn't object to it. So naturally it went in, but it is improper and you can't get it in." This is the same situation.

[866] The Court: That is true, if you don't object to the admission of testimony it goes in for what it might be worth.

Mr. Morris: I am not seeking to strike out that testimony, I am saying that they have opened the door to permit this witness to testify as to what was obvious to a person having skill in the art. They opened the subject matter.

The Court: Was that a permissible question in a proceeding of this kind? I thought we went into that the other day and confined the witness' answer to whether it was obvious to him. Of course a person skilled in the art, that is getting somewhat remote. I don't know as to who a person skilled in the art would be. I don't suppose anyone with 100 percent clarity and definiteness could say.

Mr. Morris: Your Honor, I heeded the Court's ruling meticulously, I think, and because of the Court's ruling, I think the question was proper in the first instance, but that is not for me to decide. That is the Court's decision. But here opposition comes along, asks precisely the same question, opening the door as to this witness' testimony as to what would be obvious to a person having skill in the art, and I believe that I am entitled to pursue the matter since [867] they have opened it.

The Court: What do you say about the general legal proposition? If you fail to object to evidence and it is inadmissible of course you are waiving your objection.

Mr. Morris: Means I can't complain about the admissibility of their question, but it has nothing to do with whether or not they have opened the door, authorizing me to ask the same type of questions of the same witness upon the same subject matter.

The Court: I think you could ask the same question of the witness, as to the specific question answered regarding the Hunter patent. But whether that would open the door to all types of evidence along that line, assuming the ruling is correct, is another matter. I don't think it would.

Mr. Morris: Well, I have said all I have to say about it, and what the Court rules I am going to abide by. If the ruling is against me, I want to go ahead and make my bill, except to the Court's ruling and go ahead and tender this testimony for purposes of the bill at this time.

The Court: Of course the ruling will be the same as it was on the prior day, that testimony of that type is inadmissible.

[868] Q. (By Mr. Morris) All right. In order to avoid wasting time later on, because there are only two questions—really only one, to turn to my question for purposes of the bill, Mr. Fishleigh, looking at the state of the art as it existed at the time of the alleged invention of 798, in your opinion would the disclosure of 798 have been obvious to a person having skill in the art as of that date? A. I believe it would.

Q. Now, Mr. Fishleigh, yesterday you were asked a number of questions having reference to the Rolf patent and its history, particularly as to what might have been considered by the Patent Office. I believe the inquiry carried only forward to about page 15 of the file wrapper. I would like for you to take that same file wrapper, which is Plaintiffs' Exhibit O, and turn to page 20 and just read that to the Court, please. A. Beginning where?

Q. Read the entire page, start with the date of it and go right on through.

The Court: I might say the Court has already read it. But go ahead and make your record.

Q. (By Mr. Morris) All right, let's make a record on it. A. "April 19, 1952. Responsive to amendment filed May 25, 1953.

[869] "Additional reference made of record:

Graham 2,627,798 Feb. 10, 1953 97-47.83

(Filed August 27, 1951.)

"The above cited patent has become available as a reference since the first Office action.

"Claims 1 and 2 are rejected as not patentable over the above cited patent to Graham, 2,627,798, in view of the patent of record to Graham, 2,493,811, and either of the patents of record to Jones or Elder. It would not require invention to reverse the position of member 12 of Graham, 2,627,798, so as to place it on the lower side of the tool shank 2 as is the member 63 of Graham, 2,493,811, and to substitute the nut and washer and convex surface of Jones at 13 or Elder at 'E' for the member 64 of Graham, 2,627,798. Such a substitution of equivalents would be no more than an obvious substitution of well known equivalents, not amounting to invention."

Q. Mr. Fishleigh, can you step down here to the table, please, and demonstrate to the Court the utter simplicity of reversal of the position of the hinge member and shank in the Glencoe structure? A. Well, yes. The shank and hinged member of Glencoe—

Q. Let's first put it in the structure in its normal position. In its normal position the hinge, of course, is below the shank as we have it in the device now, is [870] that correct? A. That is correct.

Q. All right. What would be the first change to make? A. Well, the first thing would simply be to remove the pivot pin and turn the shank upside down.

Q. When you have done that, what else would be necessary? A. If I did no more than that I would not have a proper stop member, but all that would be necessary would be to remove the lug from one side to the other or to put a stop lug on the upper side where the stop lug of Glencoe has been previously.

Q. Can you demonstrate that, please? A. Yes (demonstrating).

Q. When you have completed that second simple change would you then have an operative structure? A. Yes.

Q. Of course in this instance the lug that has been added has merely been screwed on by some small screws? A. That is right.

Q. But in commercial manufacture how would you expect it to be done? A. I would expect it to be an integral part of the hinged member just as the present Glencoe lug was an integral part of the hinged member.

Q. Now return to the stand, please. I would like to identify [871] that little lug element by a separate exhibit number. We will number that as Defendants' Exhibit 3-A, merely to keep it separate from the clamp as a whole, which is Defendants' Exhibit 3.

(Defendants' Exhibit 3-A was marked for identification.)

The Court: What serves the lug in the regular position is a bolt which—

Mr. Morris: No, sir, a lug directly opposite, of the same type but on the opposite side of the hinge member.

A. Member marked on drawings Defendants' Exhibit 17 as 36 contacting a lug on the fixed member immediately above it.

Mr. Gold: If Your Honor please, I believe that the record should also show that apparently the original Glencoe clamp, Defendants' Exhibit 3, has been altered to accommodate this additional lug member.

Mr. Morris: It has certainly been altered by putting two screw holes in it and threading those screw holes to receive the lug on the opposite side, just as we have demonstrated it here.

The Court: Yes, I understand it is just for demonstration of change in the Glencoe device.

Q. (By Mr. Morris) Now then, Mr. Fishleigh, have you prepared a drawing of the Glencoe structure to demonstrate [872] or to indicate the modification of the inverted parts, just as we have demonstrated it in the physical exhibit here? A. Yes, I have prepared such a drawing, it is on the easel and marked as Defendants' Exhibit 17-A.

Q. Will you point out on the drawing, please, very briefly, the modification that has been made. A. Yes.

The hinge member 21 has been turned upside down and put back on the same pivot that it was on before, and in this instance an additional lug member marked 36 has been installed upon what is now—that is, in the modified position—is now the upper face of the upper side of the hinged member in the same position that the lug 36 previously was, so that it would contact the same lug on the fixed member that 36 previously contacted, and will hold the hinged member and shank in the same position, relative tilted position that it was in the preceding—in the original drawing, Defendants' Exhibit 17.

Q. In the inverted position as we have just demonstrated it here, would there in your opinion be any substantial difference in the ultimate over-all functioning of that structure as compared to its original condition with the plate inverted? A. No substantial difference.

[873] Q. Would you recognize, Mr. Fishleigh, that when you took it into the field with that change alone you might possibly find that the particular parts weren't strong enough to handle the loads that were encountered? That might be possible? A. Well, more particularly I would think that there is a little less lateral stability so that it might require a little change in the design of the fixed member to give comparable lateral stability.

Q. And if that turned out to be true after testing, what kind of problem, engineering or manufacturing problem, would exist? A. That would be a draftsman's job. I wouldn't even think you would call it really a designer's job even.

Q. Would it merely be the matter of strengthening the material sufficiently to stand the stresses? A. Strengthening the material and the part.

Q. Now, in that orientation with the plate inverted as shown on Defendants' Exhibit 17-A, Mr. Fishleigh, if we construe the mechanical elements of the Graham 798 claims in the broad manner in which Mr. Fenton has construed them here yesterday or in the broad manner which Mr. Gold suggested on his cross-examination today, would you find a response for the mechanical elements, for each and every one of the mechanical elements in [874] the two claims in the Glencoe structure as shown on 17-A? A. Yes.

Q. Just two or three other little items I would like to check with you if I may. This is perhaps a misunderstanding of the question and answer on my part, but I am not certain about it. I believe you were asked a question pertaining to the Deere 100 clamp and were asked whether or not the device would be an operative structure without the strap and two bolts to hold the shank at the rear, and I understood your answer to be that it would be an operative structure. Did I just hear it wrong or what is the testimony in that respect? A. Well, you either heard it wrong or I misspoke, if I was asked that question, because it is clearly my opinion on the matter that it would not operate satisfactorily for the purposes intended without that strap at the rear, and I am quite certain as to that.

Q. Just as you testified that the Graham 798 structure in your opinion would not be operative with the bolt alone, with the stirrup or loop member eliminated? A. That is correct.

Q. You were asked a number of questions as to whether certain modifications of the Deere structures could be made and whether they would operate just the same. [875] Let's take first the suggestion as applied to the 100 structure. We could merely remove what was called "a little metal" off the top of the hinge member where it contacts the beam and add a little metal to the top of the hinge member so that it would contact the forward extension of the fixed member, whether it would then operate just the same as it does in its present condition. I would like to ask you two questions. Insofar as the ultimate overall result is concerned, that is, the plowing operation, would it operate substantially the same? A. I think it would.

Q. Insofar as providing the stop function would you have the same cooperation of parts to provide that stop function in the modified—suggested modification as in the present structure? A. No.

Mr. Morris: Now then, Your Honor, there was one matter which I failed to inquire about yesterday on direct examination of this witness. It is not strictly re-direct or responsive to anything raised on cross here. I would like the opportunity to present that one additional matter as part of the direct testimony, if I may.

The Court: I think that is within the [876] discretion of the Court. You may.

Q. (By Mr. Morris) Mr. Fishleigh, you have heard some references here to the Cockshutt structure, which was held not to infringe in the suit of Graham versus Cockshutt. Some questions have been asked about it. I hand you two drawings here which have been colored and marked as Defendants' Exhibits 1-A and 1-B. I will ask you if you have checked those drawings and compared them with the Cockshutt structure, which is in evidence here as Defendants' Exhibit 1, to determine whether or not they are a reasonably accurate representation of the structure of that clamp? A. I have.

Mr. Fishburn: If Your Honor please, if this is for the purpose of comparing the accused John Deere structures with the Cockshutt structure, then we object, for the same reason that I stated a moment ago, that we put in these Jeoffroy devices because they were a copy of the 798 patent, without any objection. Now, that does not waive our right to object to putting in structures or evidence relating to the Cockshutt device. If it is for the purpose of comparing the Deere structure with the Cockshutt clamp, then that is not proper in our opinion and we want to object to that. The only question is whether or not the claims of the [877] 798 patent are infringed by the Deere structures and not comparing those structures with some other structures.

The Court: As I understand it, the matter was passed upon of whether or not the Cockshutt device infringed the device in question here, the 798?

Mr. Morris: The 798 patent.

Mr. Fishburn: The court has ruled that was not infringement of the 798 patent. Now my point is that it is improper to compare the John Deere devices with the Cockshutt device to determine whether or not there is infringement of this patent.

The Court: I don't know whether that matter would be determinative in and of itself of the issue in question. It might shed some light upon it.

Mr. Fishburn: I don't think it proper at all to compare them. The question is whether or not these devices infringe the claim, and you have got to consider the claim and the prior art, and not some other device that was held not to infringe, which was several years later than the patent, not prior art at all. If it were prior art it would be a different thing, but since it is not prior art it is improper to compare the Deere devices with the Cockshutt device, just because it was held not to infringe this patent.

[878] Mr. Morris: Your Honor, I believe we had that out the first day here.

Mr. Fishburn: I don't believe we had it out at all. It was brought up but it wasn't passed on, and if the Court doesn't agree with me then I want an exception and to brief the matter.

Mr. Morris: We had the same objection raised as to the admissibility of the Cockshutt structure itself, Your Honor, and this Cockshutt structure, in my opinion, is admissible upon two grounds. First of all, plaintiff here has offered in evidence the Jeoffroy structures which were held to infringe, and I assume has been forced to argue or tries to argue that the Deere structures are substantially the same as the Jeoffroy SC-580, and have asked numerous questions along that line in evidence here the last few days. I think it is equally pertinent though, as the Court says, it is not determinative, to point out the structure of the Cockshutt device which was held not to infringe this patent. I think the use of this structure, what it shows and what elements it hasn't shown, may be used as proper to reflect the cross-examination of expert witnesses.

The Court: I would think if it sheds any light upon the issues in this case it would be admissible testimony. It might be that your objection is valid in [879] that it does not at that stage apply to the prior art. However, for the purpose of this trial, I am going to admit it at this time. I can receive briefs on it and if you are correct it will not be considered, will be later stricken and not considered in the ultimate decision.

Mr. Scofield: Your Honor, I submit, too, that it is comparable to expert testimony. Here the court has passed on what structure was not infringed by this same patent, and that should be helpful to this court in the interpretation of the same patent here. That is, it is much like our expert testimony which would be given to indicate to you what structure infringes or doesn't infringe. They have put in some that did infringe and I think by the same token that the defendants here should be entitled to put in that that was held not to infringe.

Mr. Fishburn: I would like to make one more remark, Your Honor. That argument is entirely contrary to the argument Mr. Morris made in his opening statement that in order to prove these claims you consider the claims and the prior art, and you cannot consider some other foreign matter that isn't prior. If there were prior art it would be different, but this is something entirely foreign.

[880] The Court: What if that was identical to the structure that was held to infringe? It might shed some light upon the issue. The only purpose, I think, it might show is to shed some light upon the ultimate issues involved in this case. If it doesn't it would not serve any purpose and would not be of any effect in the case. As stated previously, I think it will be admitted at this time for whatever weight it might have, and I will be glad to receive any briefs on any ruling on that particular point, whether it is admissible. If the ruling is that it is not admissible the testimony in that regard will be disallowed and not considered in the ultimate decision in the case.

Q. (By Mr. Morris) Mr. Fishleigh, I have handed to you the two colored drawings marked Defendants' Exhibits 1-A and 1-B. Have you compared those drawings with the Cockshutt structure, Defendants' Exhibit 1, to determine whether or not the drawings fairly reflect the structure as shown in the mechanical device, Defendants' Exhibit 1? A. I have.

Q. And what is your conclusion ? A. That they do fairly represent the Cockshutt structure, Defendants' Exhibit 1.

Q. Is there any difference between the drawings and the actual clamp which you think should be pointed out? [881] A. Well, I believe there is one difference, if I may check it, please. On the actual clamp there is a recess in the bottom section of the fixed member toward the rear of the clamp, which does not show on the drawing, but which I do not believe is a matter of materiality.

Q. Insofar as the issue concerning the mechanical elements of the structure is concerned here, it is your opinion that that is immaterial? A. Yes, and is not intended to show any operation different than what is in the actual structure.

Q. Have these drawings been colored with the same color scheme as used on your various charts which have been previously discussed, that is, a violet color for the frame member, a yellow color for the fixed part, a green color for the pivoted shank attaching member, a blue color for the pivot pin, an orange color for the spring means, and a brown color for the spring lock and washer and nut? A. Yes, and a pink color for the shank member.

Q. And have you in addition on these drawings shown red lines to represent the corresponding contacting faces similar to the red lines or surfaces which you have shown on the 798 patent structure? A. Yes, red lines and red surfaces.

Mr. Morris: We offer those exhibits.

[882] The Court: They will be admitted, subject to the conditions previously stated.

(Defendants' Exhibits 1-A and 1-B were received in evidence.)

Mr. Morris: You may cross-examine.

Re-Cross-Examination by Mr. Gold.

Q. Mr. Fishleigh, in regard to the part of the action that you read from the file wrapper of the Rolf application, the examiner stated that it would not require invention to reverse the position of the member 12 of the Graham 798 patent, is that right? A. Well, frankly, I think it is right, but I don't have that paragraph in mind. I haven't memorized it, I don't have a copy of it, but I think you are right. (Document handed to witness.)

That is correct.

Q. Mr. Fishleigh, what the examiner actually said was that it would not be invention for Rolf, who made this Glencoe device, to invert or to reverse the position of the structure of the 798 as taught by the 811 patent to make it the same relative position as the 811, isn't that what he said? A. Well, what he said was it wouldn't be invention to reverse the position of the member 12 so as to put it [883] on the lower side of the tool shank, as was done in 811. He didn't—I don't construe that to say do it in view of that, but it wouldn't be invention to do it, and when so doing you would have it similar to 811.

Q. In other words, since it already has a position in the 811 that was similar to the Glencoe, Glencoe then coming along here in view of this prior 798 patent didn't have any—the examiner said it would not require invention to arrange this structure as in Glencoe, in view of 811? A. That isn't what he said, at least. What he said was it wouldn't require invention to turn 798 upside down.

Q. As is the member 63 in the 811? A. That is right.

The Court: Of course he was speaking in regard to the Rolf patent?

Mr. Gold: Yes, sir. The Glencoe structure, sir, that application in this action was made after the 798 patent had been issued, and the 798 was then cited and—

The Court: That is what the Court understands.

Q. (By Mr. Gold) So the examiner didn't say anything about reversing the Glencoe structure, did he? A. No. He said reverse the 798. The implication of course is there.

Q. To reverse it to provide the position shown in 811? That [884] is what the examiner said, wasn't it? A. Well, he said that if you did reverse it, which would not require invention, it would then be in the position shown in 811.

Q. Now, you have made an alteration of the Glencoe structure and that alteration that you have made to invert this shank and plate was in view of having the Graham 798 patent before you, wasn't it? A. Well, I don't know just what you mean by that. I was aware of the 798 before I made that change, but it was done to show what would happen if you did turn them upside down.

Q. Turn it upside down so you would be then making the Graham 798? A. Well, if you did nothing more than turn it upside down you would have the same thing that 798 showed except for the longitudinally extending contacting faces, which are emphasized sometimes throughout the claims.

Q. And your teaching that you found for that inversion was in the Graham 798 patent? A. Well, I would say that was found in rather simple mechanics. As the Patent Office indicated, it was no great trick to turn it from one way to the other and no great trick to turn it from the other way to the first way.

[885] Q. No trick to turn it over when you had another patent showing the reverse arrangement? A. No trick. Period.

Q. That is your opinion, that it would be no trick, period? A. That is my opinion and it agrees I believe wholeheartedly with what apparently was the opinion of the Patent Office examiner.

Q. I believe the examiner's action speaks for itself. I won't go any further with it. You made the statement, I believe, that the 100 series—if you had testified that the 100 series device would work or would operate without the plate and bolts at the rear end, that that was in error; you then stated it would not operate without the plate and bolts, is that right? A. Not satisfactorily, no, sir.

Q. In answer to Mr. Morris's question did you also add the words "not satisfactory"? A. I don't remember the exact wording. I believe that I said something to the effect that not under the conditions for which those devices were intended to be used.

Q. And if the 100 series would not operate satisfactorily without the plate and bolt, would the 650 series operate satisfactorily without the bar across the rear of the fixed member that goes under the shank? [886] A. No, sir.

Q. Then those portions under the shank in both of the Deere structures, the 100 series and the 650 series, are essential to satisfactory operation? A. I believe they are, yes, sir.

Q. You were asked some questions regarding the Carter disclosure. Do I understand from your testimony that you would change the Carter drawings in order for the member "G" to rock? A. I don't think I say I would change the drawings. I simply say that I don't think the Carter drawings are consistent throughout and good drawings. They don't show the operation as suggested in the degree of accuracy that I would like or that I think they would be made today. But even today, I find patent draftsmen today who make rather absurd mistakes and I think this is one, and not too surprising in 1880.

Q. In taking the drawings as they were shown, that member "G" wouldn't rock very well, would it? A. Well, if I interpreted it in one way I think I could interpret the drawing so that it wouldn't rock in the way that it is quite evidently intended to. But without a great deal of difficulty I can interpret it or make allowance for the draftsman's error and make it consistent so it would rock. [887] Q. Then you are able to look at these drawings and interpret them and understand the inherent operation without any specifications at all? The drawing would be sufficient to show you that? A. Now, are you talking about the Carter drawing?

Q. Yes. A. No. I am saying that the drawing itself could be—if you just had that you might have some difficulty seeing how the thing operated. But where you have a pivot pin and a structure which clearly to function should operate and you find, for instance, that there is a difference really between crosshatching and not crosshatching a certain portion, that that makes a difference between operative and inoperative, I believe that you will normally construe the drawings to provide the operative rather than the inoperative. But there is that question up there. It isn't shown accurately.

Q. And it isn't necessary for Carter to show you every position that the shank could be in for you to understand the inherent action of the parts, is it? A. Not every position, no.

Q. In other words, you as an engineer should be able to recognize some inherent movements of the parts that actually take place in the operation of the structure shown in the drawing? [888] A. If they are natural and inherent operations.

Q. I believe you mentioned that you could very readily tell from drawings the structure and in some instances a mere rectangle was used to designate some part. But you wouldn't be able to tell what that rectangle meant without some specification or description, would you? A. That is correct, that is, in the case of diagrammatic showing there would be some indication, but quite frequently quite brief, to the effect that the rectangle represented thus or so, might even say represented a spring or a gear or something.

Q. I believe you were asked if there was anything in the Graham 798 patent to indicate it was a plow and not a harrow or cultivator, is that correct? A. I think it was something to the effect of whether it was restricted to that, was it not?

Q. Then your answer was relative to whether or not it was restricted and not to whether or not it was relating to a plow, not a harrow? A. Well, it mentions a plow, relates to a plow of a type including ground conditioning tools.

Q. In its very title it refers to a plow, doesn't it? A. Yes.

Q. And there are other places in the specification it refers to plowing, doesn't it? [889] A. That is correct.

Q. When a piece of steel is bent beyond its elastic limits so it takes a set, does it take as much or more force to straighten that piece of steel back out than it did to bend it in the first place? A. I don't believe I can tell you, give you a general answer to that, sir.

Q. You have never seen demonstrations as to bending of steel under certain forces and attempts to straighten it back out? A. I have, but I can't recall any specific relationship as between the two.

Q. You were asked some questions relative to the shank, as to which portion of the shank had the greater flexibility. What was your answer on that? A. I said that as the shank is fixed and assembled that the greater flexibility is in the curved portion.

Q. Not in the straight portion? A. No.

Q. When you bend something beyond its elastic limit, do you put stress into the structure of the steel? A. Depending on the circumstances under which it is bent, yes. If it is a cold bending it would tend to do that. If it is a hot bending it might not, wouldn't.

Q. If you did it by heat then there might not be any stress? [890] A. That is correct, or if it was bent in either condition, hot condition.

Q. Of course you don't know whether these shanks have been cold or hot, do you? A. I don't happen to know.

Q. Some springs, coil springs, are rolled or coiled cold, but they get pretty hot when they are being coiled, don't they? Have you seen that operation? A. Well, and I believe they are heat treated as well.

Q. There are some cases where in the coiling of them the heat of coiling is such that they don't even bother about heat treating, do they? A. I don't happen to know of that specific situation, but I wouldn't necessarily question it. It is possible, though not—I wouldn't expect it to be normally too accurate.

Q. Have you run tests on the amount of force that is required to bend a curved portion of a shank as compared to bending of a straight portion of the shank? A. Of the same length? Not to make that particular comparison, no.

Q. Then you don't actually know where the greater flexibility would be in the shank, in the straight portion or the curved portion, do you? A. Oh, yes. That isn't what you asked me. I have run [891] tests which indicate that as assembled the amount of bending that takes place—very substantial bending takes place under heavy forces in the curved part of the shank and very little between—almost negligible between the clamping bolt and clamping lugs or loops.

Q. In this bending are you talking about the amount of bending per unit of length? A. Well, I would be talking about both the amount of bending in unit of length and total length.

Q. Now we are again referring to a terminology of bending in the part that you have just been stating— A. Well, I should again—I followed along with you without making that distinction. We perhaps should both be talking then more about the matter of flexing, of resilient bending, below the elastic limit. At least that is what my tests were.

Q. In that case that is what you were referring to, not a bending that could cause a set? A. That is right.

Q. Actually in some of your testimony on cross-examination you were referring to bending, as you specifically stated, had it not been beyond the elastic limit, did you not? A. I don't recall that. I followed along with you without making any deliberate attempt to distinguish at that time [892] until the question came up later.

Q. In most instances where we have talked about any bending we have been keeping it a flexing that would be below the elastic limits? A. Well, I think so in most cases, although that might not be—I don't think that could be said to be a hundred percent so. I think we did talk about some bending beyond the elastic limit.

Q. I believe you told the Court that the stress throughout the length of the shank would be the same regardless of whether the shank was above or below the plate, the hinged member in these devices, is that correct? A. I don't recall that.

* * *

[893] Q. (By Mr. Gold) So we can be more specific, Mr. Fishleigh, in the Graham structure the pin in the plate is above the shank, is it not? A. That is right.

Q. And that is also true of the defendants' 100 series? A. That is right.

Q. And the defendants' 650 series? A. That is right.

Q. And in the Glencoe structure both the pin and the plate are below the shank? A. Yes.

Q. So in the Court's question earlier we were considering the pin or the plate member or both; would your answer be that the stress throughout the length of the shank would be the same whether the shank is above the plate, as in Glencoe, or below the plate, as in the defendants' structure? A. I believe substantially so, yes.

Q. You think they would be the same? A. Substantially. Now, differing in detail as to any particular change in dimensions or something, but generally speaking I would say yes.

Q. Now, when you are referring to stress are you talking about unit stress or distribution stress or does it make any difference? [894] A. Well, I believe you could talk practically either way and the same result would be substantially true.

Q. And would that also be true if we would change the word stress to flex? A. Would you want to change it to strain?

Q. No, let's change it to flex. A. Well, what do you mean by flex in a case of that kind?

Q. Would the flexing— A. The amount of movement.

Q. Yes, sir. A. Or the position of them.

Q. Yes, sir, where we have been formerly using the word bend, which would be a bend below the elastic limit, would the bend in the shank be the same throughout its length, regardless of whether or not the shank is above the plate or below the plate? A. Substantially I believe it would, yes.

Q. Now, you say substantially. I think that there have been times when the word substantially might be rather ambiguous. Can you be more definite? A. Well, for instance, we are talking about two structures in which the configuration and the clamping arrangements are somewhat different, and insofar as the length of the part clamped and all is concerned it might make some—what I would call slight difference. It is to avoid [895] being pinned down to something of that sort that I am using the word substantially. But it would be, as I visualize it, a tendency at least to come out and either straighten out or possibly curve a little bit, depending upon the amount of the load and the resistance.

Q. Now, Mr. Fishleigh, let's not dream up difficulties in regard to this question. I think the question is rather simple. It is a question of whether or not it would make any difference as to whether the plate is above or below the shank, and you have rigged up a structure here in which you turned over the Glencoe structure, you put the shank below. Now, the normal position, as shown in the drawing with the shank above the plate member, that is the design structure? A. Yes. In that case I would say they would be the same.

Q. The flexing would be the same regardless of the position of the shank relative to the plate, either above or below? A. Yes.

Q. In other words, as I understand your testimony—let's not have any mistake about it—your testimony is that the bending or flexing where it is below the elastic limit in the operation of the Glencoe structure, as shown in the drawing—as shown in Defendants' Exhibit 11, or at the right-hand side of Defendants' Exhibit 28, that [896] that would be the same as it would be if that structure was reconstructed as you have done here with this Glencoe device where the shank is below the plate? A. Yes, sir.

Q. Mr. Fishleigh, you were drawing on some exhibits to indicate how these shanks would bend or the flexing of the shank in operation. Would you please repeat that?

Mr. Morris: Your Honor, I don't see any point of this repetition of previous testimony. If this lawyer has some questions he wants to ask, all right, but to ask the witness to go back and repeat his testimony is just wasting everybody's time.

The Court: I don't think it would serve any purpose to ask him for repetitious testimony in the case.

Mr. Gold: It won't be repetition, Your Honor. I want him to show how he would do it and make a line around to show how this would bend. Will you do that?

A. Yes. In the 798 for instance it would be straight across and—

Q. (By Mr. Gold) I believe that you started the other way. A. Oh, I started here (indicating) and came up with sort of an S-curve and then across underneath there and [897] possibly at a very—in others than the 798, that is, where a specific—

Q. That is sufficient. Wait a minute now, Mr. Fishleigh. You drew this line up to show the curvature, then you came down in a sharper curve right here below or behind the hinged member, did you not? A. Well, that may be rough. I don't think that perhaps is quite the way it would come. That is just as the rough part of it coming here, but I don't think that that is what you would necessarily get, a sharp bend at that point.

Q. Now, are you saying that you would have a uniform bend throughout this curved part and on up to the rear of the hinge member? A. No, I think it would come out, coming from the other end, come out here and tend to come up above that and come down to some such position as this (indicating).

Q. Very little bending in the curved part of the shank? A. Bending from what it is now?

Q. Yes, sir. A. Oh, I think it would bend in that part as well as in the other parts; at least where I have seen them they seem to bend that way.

Q. I believe this is a little larger here in the 811 structure. In other words, your testimony would be then [898] that this entire curved part is going to tend to straighten out and have a larger radius? A. I think it would tend to, yes.

Q. And that would be the same amount of bending that you would have in the other area, that you would have immediately behind the broken plate? A. Oh, I can't say as to the detail of it. I haven't made such a sketch. I have seen them that way but I haven't measured them to measure exactly the curvature.

Q. Then your testimony here has been merely theory as to how much would be bent—how much the shank would bend in the curved part and how much it would bend in the part immediately behind the— A. No, my drawings have been at best diagrammatic and not intended to be—well—numerical in that respect.

Q. Now, I believe you also stated that when the force is up that there was a restraining force down on the shanks in the 811, 798, Glencoe; didn't you make that statement? A. I think that is generally true. There is a force against the pivot pin or fulcrum which resists movement.

Q. Now of course in all these forces that we have been talking about all along it was understood that we were referring, in your cross-examination, to a particular force and certainly those forces would be resisted in [899] some way in order to hold this structure in an operative arrangement, whether it was tipping to some degree or whether it was back up to its normal position, isn't that right? A. Yes, I think so.

Q. So then when we were talking about the direction of the forces it was not misleading or was not understood by you that we were trying to indicate there were no other forces to resist that, were we? In other words, the upward force on the shank at the rear of the hinge member certainly is always going to be resisted by something, otherwise the whole shank would go up in the air, wouldn't it? A. Oh, I would expect so, yes.

Q. And the forces we talked about being in a direction toward the face engaged by the shank in the 798 structure, was that one force that was acting on the shank tending to cause it to move up at the rear? A. Well, that is what I understood, at least.

Q. Now, of course we do have a spring force that is applied to the front of the shank in the Graham 798 structure? A. That is right, which tends to or permits the device to move so that any diagram that I was making roughly was not at the moment taking account of the fact that the hinged member and that portion of the shank would shift [900] under the action of the forces too.

Q. Now of course the defendants' structures also have springs that tend to return them to their normal positions and they are acting in such a way that there is a force on the forward end of the shank? A. That is right.

The Court: Gentlemen, * * * we will be in recess until 10 a.m. tomorrow.

(Adjournment.)

[901] MORNING SESSION, THURSDAY, MAY 10, 1962

CLARENCE T. FISHLEIGH resumed the stand and testified further as follows:

Mr. Gold: I have no more questions of Mr. Fishleigh.

Re-Direct Examination by Mr. Morris.

Q. Just one very brief item. Mr. Fishleigh, concerning the resiliency and bending or flex of the spring steel shank in these structures, particularly in the Deere 100 and the Deere 650, have you conducted some tests to attempt to make some measurements of some of those flexes? A. Yes, sir, I have.

Q. I would like to hand you four photographs which we have identified as Defendants' Exhibits 52-A, B, C and D, and ask you please to state what each of those are, in order.

Mr. Fishburn, I am sorry, I don't have any extra sets of those. We will have to have some more prints made for you. A. Well, all of these four show the Deere 100 series clamp on a test stand, where force was applied to the lower end of the shank to see what deflection there was in the shank itself, what deflection there was in that [902] portion of the shank up in the clamp and—

Mr. Morris: I haven't offered them yet, Mr. Gold.

Mr. Gold: I just want to see them.

Q. (By Mr. Morris) Would you describe just very briefly the physical setup that was used to apply the pressure to the shank, and so on. A. Yes. A bar was mounted between two uprights to simulate the cross frame of a plow. The clamp was mounted upon that transverse member. Then a hydraulic cylinder and connecting means were attached to the lower end of the shank and force applied in increments of 500 pounds and measurements of the deflection or change, if any, of that portion of the shank in the clamp relative to the hinged member itself. A series of dial indicators were set up, attached to the hinge member and registering the relative position of the shank member with respect to the hinged member.

Q. All right. Refer, please, to the Exhibit 52-A and state what that particular exhibit reflects, and raise it up so the Court can see it as you explain. A. 52-A shows the position of the setup and particularly the contour of the shank before any pressure was applied, before any force was applied.

Q. As it appears in that photograph, is the shank in its [903] normal unstressed contour? A. Yes, sir.

Q. And is the clamp itself under any pressure in that first photograph? A. Nothing other than the weight of the shank itself.

Q. Then 52-B, and what does it show, please? A. It shows a front view of the clamp, showing the condition of the coil springs and the relationship of the hinged member to the fixed member.

Q. In that particular photograph had any pressure yet been applied to the shank element? A. No. That is comparable—

The Court: That is the shank here (indicating)?

A. Yes. That is comparable to 52-A, both taken under the same conditions, but one from the side and one from the front of the device.

Q. (By Mr. Morris) All right. Then pass to 52-C. A. 52-C shows the same clamp and the same setup with 4,000 pounds applied of pressure, force or pull, at the bottom end of the shank.

Q. Does that photograph show a deflection of the shank member itself? A. Yes, what I would call a very substantial deflection.

Q. As shown in that photograph, approximately what was the distance or amount of the flection of the shank at [904] its lower end? A. In the neighborhood of ten inches.

Q. And I believe you said that was with 4,000 pounds of pressure applied to the shank by the hydraulic cylinder? A. That is correct.

Q. Pass to Exhibit 52-D, please. What is it? A. Another front view comparable, as far as the relationship is concerned, with 52-B, and shows the condition and the relationship of the shank and the hinged member and the compression of the coil springs under that same load of 4,000 pounds.

Q. Does that particular photograph, the fourth one, 52-D, reflect that the springs have been totally compressed? A. Yes, it does, and in the course of the test it was evident that they were fully compressed at somewhat less load than the 4,000 pounds.

Q. All right, sir. Now then, with the varying tests under varying loads, what was the maximum amount of deflection of the shank which you were able to measure in its forward end between the pivot point and the point of spring attachment? A. With the 100 series clamp and with the bolts tightened as they should be in normal operation, the maximum movement of the shank away from the pivot member was four thousandths of an inch, four one-thousandths [905] of an inch.

Q. Four one-thousandths of an inch? A. Yes, sir.

Q. And would that be at approximately the same time that the tool end of the shank was deflected approximately ten inches as indicated in the third of the photographs there? A. That is correct.

Q. Now then, with the bolts loosened in the 100 clamp, that is, the forward fastening bolt which attaches the shank to the hinge member at the forward end, and with the fastening bolts at the rear which hold the shank to the hinge member at the rear, with those also loosened so that they were not in an intended operative condition, what was the maximum amount of flex in the forward end of the shank which you were able to demonstrate? A. Thirty-two thousandths of an inch.

Q. Now then, were similar tests made for the 650 clamp to determine the possible flex of the forward end of the shank away from the hinge member in that clamp? A. Yes.

Q. And what was the maximum demonstrable flex in the forward end of that shank away from the hinge member? A. At no time, up to and including the application of 4,000 pounds, was there any movement of the shank away [906] from the hinged member.

Mr. Morris: You may cross-examine.

Re-Cross-Examination by Mr. Gold.

Q. Mr. Fishleigh, were any of the plaintiffs' personnel present during the making of these tests? A. No, sir.

Q. You mentioned some bolts on the 100 series. Were those bolts tightened before the test? A. Yes.

Q. And the pictures you have produced, Defendants' Exhibit 52-A and Defendants' Exhibit 52-C, will you tell us exactly what differences—what was done, what things were moved, between those two pictures? A. The only thing that was moved was that hydraulic pressure or force was applied through the hydraulic cylinders so as to pull on the bottom end of the shank, the hydraulic cylinder having been located in the first instance slightly above the bottom end of the shank.

Q. The first picture was taken to show what you said was the unstressed position, then the only thing that was done was to apply pressure to the cylinder and take the second picture? A. Yes. That is, in the meantime we had stepped up increments of 500 pounds and had made readings of the [907] dial indicators at those various increments of pressure.

Q. Nothing else was moved other than that? A. Not of the main equipment.

Q. On the stool you have an indicator of some type. It shows a dial or face in Defendants' Exhibit 52-A. In Defendants' Exhibit 52-C that is turned around, isn't it? A. That is correct.

Q. At least it is not the same view, is it? A. Well, no, that particular recording instrument, on the basis of which the pressure was applied, had been moved slightly.

Q. So there were other things done to it between these pictures than what you mentioned awhile ago? A. Not as far as the clamp and the shank and the power application. As far as the other materials, perhaps wrenches are moved and other things, or the recording instrument could very well have been moved, and apparently was, so that it could be read more readily. But nothing that affected the operation.

Q. Tell us again the location of this dial indicator that you mentioned. A. Well, there were a series of dial indicators which were fastened to the hinged member by means of a series of—

Q. Show us the series of dial indicators in these pictures, [908] Mr. Fishleigh. A. There is only one of them that shows clearly in these pictures and that is at the front end, but there were others arranged—

Q. That is the only ones shown in these pictures? A. In these two pictures.

Q. These pictures don't adequately show the test structure then, do they? A. They don't show the complete details of it. They show the condition of the coil springs and the condition of the shank.

Q. And the dial indicator that is positioned or shown in these pictures engages the forward end of the shank? A. That particular one does, yes, sir.

Q. I have placed Defendants' Exhibit 27 on the easel. When we refer to the front end of the shank where that dial indicator was located, that would be at the point

I am placing my finger, in other words, just ahead of the bolt numbered 13 that secures the front of the shank to the hinge plate? A. That is correct.

Q. And measurement at that point wouldn't show any deflection as to what would occur in the portion between the bolt and its plate at the back of the hinge member, would it? [909] A. No. That particular indicator would show only what occurred at that point.

The Court: Is that where the flexion indicator was located, the front part?

Mr. Morris: Your Honor, we can bring it out clearly. I believe he has already said that there were several indicators, and if Mr. Gold doesn't bring it out here I will bring it out. There were indicators located at intermediate points all along, and between the point of forward attachment and at the rear, and measurements were taken at several different points between those two points, deflection measurements were taken at those different points.

The Court: The deflection wouldn't be the same, would it?

Mr. Morris: It will not be the same, and I asked him about the maximum. We will also bring out, if anybody wants it, the maximum was approximately at the center point. The others as they grade toward the two ends become zero, virtually so.

Q. This deflection that you found in the 100 series was a deflection bowing the shank downwardly away from the plate? A. To the extent of four thousandths of an inch, yes, sir.

Q. Will you answer my question, please? It was downwardly [910] away from the shank? A. Yes, to that extent.

Q. And the deflection that you mentioned in the 650 series, it also was a deflection downwardly away from the shank? A. No, I said there was no deflection away from the shank in the 650 series.

Q. No deflection whatsoever? A. Not away from the shank.

Q. Away from the plate member. I am sorry if I said shank. A. Oh, if you did—anyway, I meant from the plate member, as no doubt you did.

Q. To be clear, your testimony is that in the 650 series there is no deflection of the shank away from the plate member? A. No movement of the shank away from the plate member when the force is applied.

Q. Now referring to Defendants' Exhibit 52-B, tell us the mounting of the dial in that structure. A. The dial was mounted through a series of plates and brackets which I can't at the moment describe in detail, but to the hinged member, so that it was carried by the hinged member and with its point upon the shank, and that was checked to see if there was any permanent change, because it was run from zero to 4,000 pounds at [911] 500-pound increments, then returned to zero and checked and did check out to be—all of the dial indicators came back to zero, and then ran through once more at 1,000 increments just as an additional check, to see that the dials—that there was not any looseness or difficulty in that way.

Q. But you are not able to tell us in detail the mounting of that dial? A. I can't at this moment. I helped in setting them up and seeing them set up, was there when they were set up, but I don't have in mind and didn't make any notes or diagram as to the exact arrangement of clamps and plates which carried that connection out.

Q. You do have duplicates of these pictures, do you not? A. I have a set of my own, yes, sir.

Q. Will you explain the reason for the deflection that you found in the shank in the 100 series clamp. A. Yes. There is a fulcrum at the rear end of the clamp and—

Q. That would be this point I am putting my finger on, the dark green portion right above the shank at the rear? A. That is right. There is a fulcrum or resistance at that point, there is a load out behind it and another load, or really resistance, but another load at the point of [912] the bolt connection in the one instance and at the point of the spring rod connection in the other instance, and whenever you have that type of thing there may be a very minute—or under other circumstances, if it is thin enough and differently clamped, might be substantial, but in this structure, because of the nature of the forces, it was a very, very slight deflection.

Q. As a matter of fact, it is simply physics, is it not, that you are putting a stress on a member, causing it to tend to move about a fulcrum, like a beam about a fulcrum, and you have a part on the other side that is an extension of that beam with a connection at the other end so that when you are applying stress and the resistance naturally causes the shank here, the part under the plate, to bow downward, is that right? A. Well, very little. It is more like the mounting, comes closer to being what we would have in the mounting of a cantilever beam where, if properly mounted, it is mounted to avoid any appreciable deflection, and that is what happens here.

Q. And you did find some deflection, you will admit that there was some deflection downwardly away from the plate member? A. Four thousandths of an inch in the one instance, none in the other instance.

[913] Q. Now, let's look at the Defendants' Exhibit 26 of the 650 series. There is an upward force on the shank rearwardly of the hinge member in operation, isn't there, and that would be true in your test? A. Yes.

Q. And the rear of the plate member right above the shank would be a fulcrum member just like you testified relative to the 100 series, would it not? A. After the load had been applied to it, yes.

Q. So the forces that would be applied here would be upwardly on this shank so as to tend to bend it around its fulcrum, is that right? A. It would tend to.

Q. And you do have a resistance at the forward end with a bolt connecting the shank to the plate just like we have in the 100 series, don't you? A. Yes.

Q. So the factors of the fulcrum and resistance at the forward end of the shank and this bolt is the same in the 100 series as in the 650 series? A. In general, yes, differing in detail, but in general, yes.

Q. As to the fulcrum, the forces and this bolt at the forward end, they are identical, aren't they? A. After any clearances have been taken up, yes.

[914] Q. Do you have some clearances between the shank and the hinge plate when the force is applied to it? A. Yes.

Q. Then the shank wouldn't be pushed up against that hinge member in response to those forces? A. Wait a minute. What I said was that before the forces are applied there is clearance there.

Q. Before the forces are applied? A. Oh, yes. I pointed that out several days ago.

Q. So then you measured the position of the shank before the forces were applied and then you applied the forces up to 4,000 pounds and took up that clearance that you mentioned? A. Yes, it naturally did take it up, yes.

Q. And didn't find any downward deflection in view of the clearance that you had taken up? A. That is correct.

Q. Of course you could have arranged a quarter of an inch of clearance here and then you would need a quarter inch of deflection in order to find the zero reading that you found, wouldn't you? A. Well, if the structure was built differently than it is, no doubt the results might be somewhat different. I was simply measuring the structure as it is accused here and as it is produced.

[915] Q. Did you work the cylinder many times to see what would happen in actual operation after a period of hours of plowing? A. Well, we didn't work it all day, that is, just forward and back. We ran a series of tests on this one, a number, I would say we applied it and took it off, oh, probably about 12 times, but naturally didn't attempt or at least didn't attempt to conduct what might be called a live test in this particular instance.

Q. And you didn't work it long enough so you could see if the bolts came loose? A. No. I had seen that out in the field. I saw one which had been in operation for two years and was quite tight, very tight, in fact, still.

Q. At the particular time you saw it? A. Yes. As I came to it, and out in the farmer's yard, he had no idea I was coming—there was the machine.

Q. You had a connection between the lower end of the shank and the forward portion of the clamp? A. Yes. Wait a minute. I guess I missed—I thought you said something different. May I have that again. (Question read.)

A. No, not that I—if I understand you correctly, no. I frankly don't quite understand your question.

Q. There is a member extending upwardly and forwardly from [916] the lower end of the shank. Isn't it connected to the clamp? A. If you will point out what you are talking about—I don't—

The Court: I don't follow it either.

Mr. Gold: Would Your Honor care to look at the pictures?

A. Will you point out here what you mean?

Q. (By Mr. Gold) You can't see any connection in the pictures that you are looking at? A. Not that answers the description that you are suggesting.

Q. Look at Defendants' Exhibit 52-B and you have the 52-A also. Well, let's look at 52-C. There is a member extending forwardly from the lower end of the shank, is there not, and that member also shows in Defendants' Exhibit 52-B as a rod that extends upwardly from a bolt or something on the lower end of the shank? A. No, you are completely misreading the pictures. The member which extends forwardly from the shank stops at about the stool leg, as shown in this picture. The rod which you are talking about and which in the picture does overlap is some—oh, many inches forward of it, and it is part of the member, part of the clamping arrangement which held the dial indicators in place. No connection—

[917] Q. That picture you are referring to is Defendants' Exhibit 52-B? A. That is correct. No connection between what you are pointing to as a vertical member and the member shown in 52-C or, for that matter, in 52-A at all. They are quite a number of inches apart.

Q. You also have in Defendants' Exhibit 52-B a horizontal bar extending out from some brace means at the side of the structure? A. No. That again, the brace means is on the upright supports and this bar which goes across is part of the clamping mechanism. They simply appear to overlap in the picture but they are not in any wise connected. The clamping means for the dial indicators were removed from the supports so that they operated and did not in any wise restrict the movement of the clamp in its tilting or pivoting motion.

Q. Have you previously read anything that would suggest to you that with the bolts loose you should find a maximum deflection of thirty-two thousandths of an inch?

* * *

[918] A. I have not read anything of that sort, no.

* * *

That is all.

Re-Direct Examination by Mr. Morris.

Q. Mr. Fishleigh, in conducting the tests on both the 100 and the 650, which was just discussed here, did you set measuring dials to take measurements of the deflection of the shank at various points between the point of forward attachment and the point of rear attachment or rear pivot?

Mr. Gold: Your Honor, I believe the question is very leading. I think that the witness should testify.

Q. (By Mr. Morris) All right, let's put it the other way around. Mr. Fishleigh, where did you put your measuring dials on these shanks to measure the various deflections? A. There was one forwardly of the bolts, one just rearwardly of the clamp and several in between. [919] Q. And was that true on both the 100 and 650, that is, several different dials? A. Yes.

Q. And where in the 100 did you find—approximately where did you find the maximum point, maximum amount of deflection of the shank away from the hinge member? A. Approximately in the center between the bolt marked 13 on this drawing and the strap member marked 11.

Q. Now then, as to 650, after the original tolerance or slackness was taken up and some pressure put on the shank, did there from that point forward ever at any time appear to be any measurable deflection of the shank away from the hinge member at any point? A. No.

Mr. Morris: That is all.

Re-Cross-Examination by Mr. Gold.

Q. Mr. Fishleigh, if the bolts on the 100 series would come loose then I understand from your testimony that [illegible] would deflect more? A. Well, it might, yes, under certain conditions.

Q. Now, on your re-direct I believe you said that after you had pushed the shank up against the rear end of the plate member, that from that point you had no deflection whatsoever in this part of the shank under [920] the plate? A. I don't think I said just that. I said no deflection away from the hinged member, was what I was asked.

Q. You did have the flection in the shank? A. Some slight movement of it, yes.

Mr. Gold: That is all.

Mr. Morris: No further questions.

(Witness excused.)

Mr. Fishburn: In view of this witness's testimony regarding the Cockshutt device and these exhibits, plaintiff would like to introduce in evidence as Plaintiffs' Exhibit Q photostatic copy taken from the record in the Cockshutt case, No. 16,955, starting on page 16 through page 27, which consists of Judge Dooley's opinion, letter opinion in the District Court, findings of fact, conclusions of law and judgment, with respect to the validity phase of the Graham patent in suit.

The Court: Northern District of Texas?

Mr. Fishburn: Yes, Northern District of Texas.

Mr. Morris: Do you want to introduce also his opinion in the first case, finding no invention in that patent? You don't want to introduce that, I assume?

Mr. Fishburn: I am not going to introduce it.

[921] Mr. Morris: If you want to introduce this I will have no objection on the condition that his letter opinion in the first Jeoffroy case, in which he first held the patent invalid, is part of the record in the case, otherwise I will object to that.

Mr. Fishburn: Won't the reported opinion in the Court of Appeals take care of that?

Mr. Morris: I don't know whether it will or not. I rather doubt it.

Mr. Fishburn: I don't object.

Mr. Morris: I have no objection then to your introduction of your proposed exhibit, Plaintiffs' Exhibit Q.

* * *

[922] GEORGE DWIGHT HUNTER, previously duly sworn, was called as a witness on behalf of the defendants, and testified as follows:

Direct Examination by Mr. Morris.

Q. Mr. Hunter, sometime earlier in the case here some questions have been asked concerning the function of the rear web or bar member of the Deere 650 main clamp. Will you please tell us what the purposes of that particular bar are in the clamp. A. The bar in the lower rear corner of the 650 clamp has two primary functions. One is to give lateral support to the side members of the clamp so that they may resist the side loads imposed in the side members by the standard, provide mutual support between the two side bars, side plates. The second function is to support the standard during rebound.

Q. Now then, in the working drawings of this 650 clamp, blueprint of which is in evidence here as Defendants' Exhibit 38, is there a designed clearance between the bottom side of the standard or shank and the upper surface of the web member which we have just been discussing? A. Yes. That is clearly shown in this—

Q. Will you point it out to the Court, please, Mr. Hunter. [923] A. Design clearance is indicated between the lower surface of the standard and the upper surface of the web member in this lower left-hand corner.

The Court: This is the amount of clearance (indicating)?

A. Yes, sir, that is the amount of clearance in the home position. This is the clearance that is shown at the—

Q. As the shank pivots or rocks about its pivot point, does the clearance between the bottom surface of the shank and the upper surface of the web member open up? A. Yes, it increases.

Q. I suppose it would be recognized that the bolts are not fastened tight or there may possibly be some variations in shank thickness or hinge thickness, that it would be possible for the shank upon occasions to contact the web when in a static, unoperating position or condition, is that correct? A. Yes, that could happen.

Q. Does that factor perform any function in the device at all though? A. No. As the standard comes under load that immediately lifts up.

Q. The minute any groundworking load is placed on the plow tool, does the shank move away from whatever contact it may have with the bottom bar or web member? [924] A. Yes, that is correct.

Q. Then of course you have already stated it may contact it on a recoil or rebound action? A. That is right.

Mr. Morris: You may cross-examine.

Cross-Examination by Mr. Gold.

Q. Mr. Hunter, would you please step down here a minute. I have here Plaintiffs' Exhibit I, that is a 650 series clamp, is it not? A. Yes.

Q. And that is what you were testifying about in connection with Defendants' Exhibit 38, the drawing that you were testifying about? A. Yes.

Q. And you said there was design clearance between this bar and the shank? A. Yes.

Q. Can you move that up and down to show us that clearance?

Mr. Morris: I expect you will have to remove the spring pressure, Mr. Gold.

A. Yes, that can be moved like that (demonstrating).

Q. (By Mr. Gold) Slightly? How much? A. How much would be only an estimate. Very slight.

Q. Very slight. Insignificant? [925] A. No, I wouldn't say it was insignificant, but there was movement there.

Q. Actually there is enough clearance to allow the shank to be slipped in— A. I didn't hear you.

Q. The clearance is just enough to allow the shank to be slipped in, isn't there? A. No, that isn't its only purpose.

Mr. Gold: That is all.

(Witness excused.)

* * *

[931] The Court: Gentlemen, we will take a short recess of five minutes.

(Recess.)

[932] Mr. Morris: Your Honor, we have no further witnesses. I would like to check off and offer our exhibits at this point, please.

We will offer the following exhibits which have been heretofore identified:

Defendants' Exhibit No. 1, which is the Cockshutt spring clamp.

Defendants' Exhibit No. 1-A and 1-B, the colored drawings of the Cockshutt clamp.

Mr. Fishburn: If Your Honor please, do you want us to make any objections as we go through them?

The Court: It would probably be easier for the record if you would make your objections as he takes each one up.

Mr. Fishburn: I have already stated my objection in connection with the Cockshutt colored drawings.

The Court: Yes, and that has been noted for the record, and it has been admitted subject to being stricken after you file your briefs if I think your objection is well taken.

Mr. Fishburn: I call attention to the inaccuracy in the Exhibit 1-B, noted, I think, by the witness.

Mr. Morris: You are not saying that there [933] are any other than the one Mr. Fishleigh pointed out?

Mr. Fishburn: No other at the present time, so we have none.

Mr. Morris: Defendants' Exhibit No. 2, the Jeoffroy SC-580 spring clamp.

Defendants' Exhibit 3, the Glencoe spring clamp.

Defendants' Exhibit 3-A—

The Court: Pardon me just a minute. May we proceed on the basis that unless you make objection as he names them you are not objecting to their admission?

Mr. Fishburn: That is correct, Your Honor.

Mr. Morris: Defendants' Exhibit 3-A, which is the lug, separate lug attached to the Glencoe clamp and used for demonstration purposes.

Mr. Fishburn: Now, we object to that on the ground that it is just made up to show the shank turned over.

There has been no device made or used according to that. It was made by this witness for the purpose of use in this trial only.

The Court: Made just for demonstration purposes.

Mr. Fishburn: That is right.

Mr. Morris: No contention otherwise.

[934] Defendants' Exhibit 4, the file history of patent 798.

Defendants' Exhibit 5, the book of prior art patents.

Defendants' Exhibit 6, the Graham 811 spring clamp.

Defendants' Exhibit 8-D—maybe to make the record complete—well, these may possibly come in later. We will leave them alone for the moment.

Defendants' Exhibit 8-D, which is—

Mr. Gold: Are you skipping some?

Mr. Morris: Yes, I am skipping some which haven't been identified yet, may not be.

8-D, Claim 7 from original 798 patent application as filed.

Mr. Gold: I believe that is a copy of that that has been broken down into elements, separated into elements in the Defendants' Exhibit 8-D.

The Court: Has any language been changed in it?

Mr. Gold: The language is the same.

Mr. Morris: No change in language.

Defendants' Exhibit 11, Mr. Fishleigh's colored chart No. 1.

Defendants' Exhibit 12, colored enlargements of the Dunbar patent drawings.

Defendants' Exhibit 13, colored enlargement of the Rix patent drawings.

[935] Defendants' Exhibits 14-A, 14-B, 14-C, colored enlargements of the Graham 811 patent drawings.

Defendants' Exhibit 15, colored enlargements of the Traeger patent drawings.

Defendants' Exhibit 16, colored enlargements of the Petersen patent drawing.

Defendants' Exhibit 17, colored enlargements of Glencoe drawings.

Defendants' Exhibit 17-A, colored enlargements of Glencoe drawings, showing the plate member inverted and an additional lug attached.

Defendants' Exhibit 18, colored enlargements of Jeoffroy SC-580 drawings.

Defendants' Exhibit 19, Mr. Fishleigh's Chart 2.

Defendants' Exhibit 20—

Mr. Gold: I didn't get that last part.

Mr. Morris: Chart 2, Defendants' Exhibit 19, Mr. Fishleigh's colored chart of prior art, Chart 2.

Defendants' Exhibit 20, another of Mr. Fishleigh's colored charts with respect to prior art, being Chart No. 3.

Defendants' Exhibits 21-A, 21-B, 21-C, 21-D, colored enlargements of the Graham 798 patent drawings.

Defendants' Exhibit 22, Mr. Fishleigh's Chart [936] 11 of Graham 798 Claim 1.

Defendants' Exhibit 23, Mr. Fishleigh's Chart 12 of the Graham 798 Claim 2.

Defendants' Exhibit 24, Mr. Fishleigh's Chart 21, showing a composite of Jeoffroy SC-580 and Rix.

Defendants' Exhibit 25, Mr. Fishleigh's Chart 22, showing a composite of Graham 811, Petersen and Glencoe.

Defendants' Exhibit 26, colored drawings of the Deere 650 spring clamp.

Defendants' Exhibit 26-A, one of the Deere 650 spring clamps, here on the table.

Defendants' Exhibit 27, colored drawings of the Deere 100 spring clamp.

Defendants' Exhibit 27-A I believe has already been offered but we offer it again, the Deere 100 spring clamp, also a part here on the table.

Defendants' Exhibit 28, Mr. Fishleigh's Chart 3, showing mechanical elements of Claim 1, not found in the Deere 650 or the Deere 100 structures.

Defendants' Exhibit 29, Mr. Fishleigh's Chart 32, showing mechanical elements of the Graham 798 Claim 2, not found in Deere 100 spring clamp.

Then our numbers 30, 31, 32, 33-A and 33-B and 34-A and B have already been offered by the plaintiff. [937]

We are not making a separate offer of them. They are in the record. The same thing is true of our Exhibit 38, Defendants' Exhibit 38, Defendants' Exhibit 39.

We will omit exhibit numbered 40, there will not be any number 40.

Defendants' Exhibits 41 and 42-A through I, and 44 have all already been offered—let me take that forward; also 45-A and B and 46 have been offered by plaintiff. We will not make any additional offer. They are in the record.

There will not be an Exhibit 43, unless something else should develop.

Exhibits 47 and 48 will be omitted.

Defendants' Exhibit 49, which is one of the Graham sweeps, has also previously been offered by plaintiff.

* * *

Mr. Fishburn: I believe you marked this [938] (indicating).

* * *

Mr. Morris: Let me get my numbers straight then. That is Graham clamp made April 1962?

Mr. Fishburn: April 3rd—well, it was used—

Mr. Morris: But marked as Defendants' Exhibit 50. I will not offer it.

There will be no Exhibit 51.

We offer Defendants' Exhibits 52-A, B, C and D, the photographs of a part of the test setup, testified to by Mr. Fishleigh this morning.

Then we will offer as Defendants' Exhibit 53 Judge Dooley's letter opinion dated September 9, 1953, in civil action No. 1469 in the United States District Court for the Northern District of Texas, Amarillo Division, styled Jeoffroy Manufacturing, Inc., v. Graham.

(Defendants' Exhibit 53 was marked for identification.)

Mr. Morris: And as Defendants' Exhibit 54 a photostatic copy of Judge Dooley's letter opinion to counsel in the same case dated December 18, 1953.

(Defendants' Exhibit 54 was marked for identification.)

Mr. Morris: Defendant rests.

[939] Mr. Fishburn: Your Honor, in connection with these colored charts, I didn't want to make objection each time, but I think it is already understood that the printing and writing on those are these defendants' arguments, their position with respect to these things, and we do not agree in any way that they are true, those designations that he put on, like his statements here in the center.

The Court: Certainly the Court wouldn't place that burden on you, Mr. Fishburn.

All of the exhibits will be admitted subject to the objections.

(Defendants' Exhibits 1, 1-A, 1-B, 2, 3, 3-A, 4, 5, 6, 8-D, 11, 12, 13, 14-A, 14-B, 14-C, 15, 16, 17, 17-A, 18, 19, 20, 21-A, 21-B, 21-C, 21-D, 22, 23, 24, 25, 26, 26-A, 27, 27-A, 28, 29, 52-A, 52-B, 52-C, 52-D, 53 and 54 were so received in evidence.)

PLAINTIFFS' CASE IN REBUTTAL

F. C. FENTON, recalled by plaintiffs, testified in rebuttal as follows:

Re-Direct Examination by Mr. Gold.

Q. You are the Mr. Fenton who previously testified in this case concerning the Deere clamps charged to infringe? A. Yes, sir.

[940] Q. Have you examined the copies of the patents which were set up by the defendant as a part of the prior art pertinent to the Graham patent in suit? A. Yes.

Q. Did you hear the discourse or comparison made of these reference patents with structures shown in the patent in suit and the accused structures, by Mr. Fishleigh? A. Yes.

Q. I believe there was also a Moore patent that was set up by the defendants, No. 503,288. It is in the book of prior art, Your Honor, Defendants' Exhibit 5.

The Court: Yes.

Q. (By Mr. Gold) Would you like to comment on the device shown in the Moore patent as to character of the mounting and also as to the character of the mountings of the devices shown as prior art on Defendants' Exhibit 11? A. Yes, I would. I think the discussion of the prior art might well be made by dividing it into two classes. I call one class the antique art and the other class the modern art. Now, the characteristics of the antique art—in most instances are old, that is back a long while ago, and it is intended to be operated by horse power, which means that the tools are light, that they contact the ground only at shallow depth and [941] they are surface cultivators and harrows. That is one characteristic.

The other characteristic of this prior antique art is that in every instance these are what I call a simple pivoted shank, which is best illustrated, I think, by Moore. By a simple pivoted shank, we have a groundworking tool on one end, a spring on the other end and a pivot somewhere in between, and that is a characteristic of these prior art patents.

It is true there are variations, but in Traeger, for example, we have the groundworking tool, the spring, and a pivot. Of course this Traeger has two parts, but I am taking only the part that is really adequately shown in this discussion, the upper part is more or less intimated. I mean it isn't fully disclosed.

Take the Cobb patent. The Cobb patent has a groundworking tool, a spring and a pivot. The Dunbar patent has a similar spring, a groundworking tool and a pivot.

Now, in the Rix and the Petersen patents, there has been quite a lot of attention given by the witness, Mr. Fishleigh, to this pivoted part. But actually if you examine that you will see that the function of this extension is merely an extension of [942] the shank to contact the spring and to furnish the stop as in the case of Rix. It is the same in the Petersen patent. In fact, the Petersen patent claims nothing basically except these grooves, the shank is placed in a channel in the hinged member and the hinged member is placed in a channel in the fixed member, the purpose of which is to stop lateral motion.

So we have here simple pivoted members for light duty. Now, why haven't they been used, why hasn't this idea been used in the modern art? When Graham was confronted with the problem and these gentlemen with Deere were confronted with the problem of designing a clamp for use in their modern tools, why did they make use of this art in designing it?

Well, there are several reasons, of course. One is under a heavy duty load it is difficult to pivot a shank so that it will be strong enough, so that the pivot will hold, and bear in mind that the shanks were pretty well standardized, that is, they didn't wish to change the size and the shape of the shanks in designing this pivot. So not only was it hard to make a pivot arm on one of these heavy shanks that will hold—

The Court: Mr. Fenton, in that connection were the shanks used on a rigid frame the same size as the shanks that are used on the—what they call the [943] vibrating pivoted frames? A. You mean this old art?

The Court: No.

A. In the new art?

The Court: Yes.

A. Well, I don't know anyone who has tried to do it actually. No one has tried to pivot these heavy shanks—

Mr. Morris: That is not the question, Mr. Fenton.

A. Then I didn't understand.

The Court: The question was, when they had just a rigid frame, were the shanks the same size as these shanks?

A. In some cases, yes. They are now the same size on rigid frames, and they are attached at the front and not pivoted. They are attached at the front end.

Q. (By Mr. Gold) I believe, to make it more clear, I think that what the Court possibly had in mind was the devices such as in the Noel patent in the prior art, which was a device similar to what Graham had to start with, with what was called the fixed clamp? A. Yes, not a pivoted clamp.

Q. Would those shanks be of similar size to what the shanks are now in these cases? A. In earlier days I think the shanks were smaller, but in [944] recent days they are all the same size or many of them are the same size.

May I go on now?

The Court: Yes.

A. Well, my point is that it wasn't possible or practicable to make a pivoted shank to take the heavy power, the hard shocks they were called upon to do. So when Graham was confronted with this problem of designing the clamp for his plows, he hit upon the idea that—

Mr. Morris: Now, I object to what idea Mr. Graham hit upon, Your Honor, as pure speculation of this witness. He can confine it to what is disclosed by the patents, but some other things would be pure guesswork.

A. It is listed as the Graham patent No. so-and-so, and I suppose that would assume some—

The Court: I don't think it would be permissible on what his ideas were. He can testify as to what the patent shows, certainly.

A. Yes. Well, this patent 811 was the first real answer to the problem, and what are the basic things about that patent that makes it what it is and distinguishes it from these antique arts? He has—or there is, I beg your pardon, there is in this device—

Mr. Morris: In which device, Mr. Fenton?

[945] A. The Graham 811.

* * *

[946] Q. (By Mr. Gold) Will you continue now, Mr. Fenton. A. I wish to point out that the Graham 811 has a fulcrum plate. Now, the characteristic of this fulcrum plate is that it extends along the shank and takes the thrust or the pull of the shank and the two pivot together [947] more or less on this spring bolt which is fastened to the front of the shank. This carries the load in a direct line and it permits a larger movement and you can plow deep, this tool goes in 18 inches sometimes under certain conditions. The character of this device permits larger movement and supplies the resilient action that was wanted.

Q. Now you said that it carries the load in a direct line. Can you tell us what you mean by a direct line? A.

Well, along the line of the shank, from the stress applied by the plowing here, the force applied by the plowing is carried in a parallel line. I might contrast that to this one (indicating). This is a shank attaching member, it was claimed that at least. Its structure was entirely different in that it carries the load laterally to the spring, you see, and to the stop.

Q. And in the 811 structure would be longitudinally of that part of the shank and the clamp? A. Yes. Basically this then (indicating).

Q. Just a minute, Mr. Fenton. And you were referring to another structure on Defendants' Exhibit 11. I don't believe you called the name of the patent. That was the Rix patent that you were referring to, were you not? A. Yes, the Rix. So I think that we ought to keep in mind [948] the basic element of this as the new. Now, this is the only real element that has been used by the so-called modern art.

* * *

A. Well, is it permissible to state, which I would like to, that all of the modern art have used the principle embodied in 811 in one form or another?

The Court: You may give that as your opinion, yes.

A. That is my opinion. And this device is still in use in a wide way, as evidenced by, for example, the survey [949] which the Deere men made. It says in the summary that there is one of these on every farm nearly.

When I look at the antique art I don't find that member (indicating), that fulcrum plate member, in any of these. There are, it is true, elements, mechanical elements, and Mr. Fishleigh found all of the mechanical elements in some of these, he reported. But I don't find this element (indicating) in the way it is used in any of these antique structures.

The Court: Are you referring now to the fulcrum plate?

A. Yes, the fulcrum plate idea in application.

Q. (By Mr. Gold) When you say the fulcrum plate idea, do you have in mind relationship of the shank and the plate and also the forces that are applied? A. Yes, sir, I refer to those.

Q. What are the particular characteristics of the 811 structure? Can you tell us a little more about that? A. Well, we have mentioned the main characteristics, namely, a resiliently mounted shank, attached to a frame, with a spring on the front end to provide the resilience, a fulcrum plate pivoted at the rear and provision for the rocking movement. This has been discussed many times here. I think its operation is very clear.

[950] Q. Now, let's refer more specifically to some of this art that you have classed as antique art. Refer to the Dunbar patent on Defendants' Exhibit 11, and tell us how the forces would be applied and tell us more in detail about the character of that structure. A. We have the groundworking tool, a harrow tooth, which is pivoted to a member here, attached to the fixed member of the frame, and the "C" spring, which urges the groundworking tool forward.

Q. And how are the forces applied to that structure that can cause you to characterize it as a simple pivot? A. We have, as I mentioned before, a groundworking tool, a spring, and a pivot between the two.

Q. And how are the forces applied to it as to direction? A. The forces are applied rearwardly by the soil, by the working of the soil, and that is resisted by the spring above.

Q. Would those forces be primarily longitudinally of the shank or transversely? A. Transversely very largely.

Q. Now, refer specifically to the Cobb structure and tell us the characteristics of that that would cause you to call it a simple pivot. A. The Cobb structure is almost identical in principle of operation. We have this groundworking tool, we have the [951] spring, we have the pivot between them, and the pivot is attached, of course, to the frame.

Q. Well, you also have a plate member in the Cobb structure, do you not, that is colored dark green on the exhibit, and how is the shank and the plate member, as far as forces, how do they act? A. Well, the force is applied to the plate member and transferred to the spring at this point and causes the spring to flex in a left-hand direction.

Q. Would the force from plowing be primarily longitudinally of the shank or transversely of the shank? A. Transversely, backward here, forward on spring (indicating).

Q. Now, do I understand the same comments apply to Rix, from what you said awhile ago? A. Well, the direction of the tool is the same, downward, harrow-type tool. Here is the groundworking tool, here is the spring, here is the pivot (indicating). In order to reach the spring they have put in a little extension which is essentially an extension of the shank, the purpose of which is to give adjustment, upward and lower adjustment. These tools wear off and you have got to lower them after a while, or throw them away, and so here you have an adjustment in height.

Q. And the forces would be applied in that case [952] longitudinally or transversely of the shank? A. Transversely, for the most part.

Q. Now, refer more specifically to the Petersen structure. That is at the lower left-hand corner, I believe, and tell us how you characterize that structure. A. The Petersen structure, the tool is not disclosed, but it is probably either a harrow or a cultivating tool, a horse hoe. The shank extends through this fastening means (indicating) to an extension of the shank which is run up here to contact the spring. So as the tool moves against the ground resistance it compresses the spring.

Q. And would the principal forces on that shank be longitudinally or would it be transversely? A. Transversely. Those are all in the same relative position, as far as that is concerned.

Q. Now, will you please tell us the differences, if any, of the 798 structure from the 811 structure? I have placed on the easel Defendants' Exhibit 21-A, showing the 798 structure. It might be better if I would move it down here closer to the 811. A. I have listed six changes as indicated by—six changes in the 811 patent in order to produce the 798 patent. The first one is that the longitudinal movement between the shank and the fixed member has been eliminated by [953] putting in a bolt here, shown in green on this drawing below. The second change is that the spring is relieved of its function, the spring bolt is relieved of its function of pulling the shank by this bolt and therefore the spring bolt is relieved from much of the wear which characterizes it in its former shape.

Q. Do I understand you to mean that in the 798 structure it is relieved from the wear and stress that was experienced in the 811 structure? A. Correct. The third point is, this wear that was evident where the shank encountered the under part of this fixed member in the groove—

Q. You are pointing to the rear part of the fixed member? A. Yes. When this device functioned this shank pushed up against the rear portion of the fixed member and that was one of the main points of wear, or is one of the main points of wear. This is eliminated—

Q. In what manner is it eliminated? A. By placing around the shank an embracing member—no, I am wrong in that case, I was mixed up there.

Q. I think that you were telling us about the wear on the rear of the fixed member, Mr. Fenton, and that that was eliminated in the 798 structure. How was it eliminated? A. It was eliminated by changing the relative position of [954] the shank and the fixed member, placing the shank below the fixed member—below the pivoted member so that the pivoted member is placed between the shank and the fixed member. No possibility of the shank contacting that lower face of the fixed member under those conditions.

Q. And the pivoted member rocks about what in the 798 structure? A. Rocks about the pivot point.

Q. That is the pivot pin? A. Pivot pin, as indicated at that point in blue, and the other point is the lateral movement of the shank was restricted by putting a stirrup around the shank at the point just below the pivot pin.

Now as a total, I say the six points which I have listed, as a total of these changes there has been achieved a more desirable flexing of the shank throughout its length in the clamp, more desirable.

Q. When you say a more desirable flexing, will you elaborate on that a little bit and tell us what you mean. A. Well, there is undoubtedly some flexing of the shank in the Graham 811 patent, but in this it is more controlled and I think perhaps a little greater in amount.

Q. We have been talking some about the 811 structure. There [955] is another item in the prior art that is shown on Defendants' Exhibit 11 and that is the Jeoffroy SC-580 structure in the upper right-hand corner. Would you comment on that structure, please. A. As I understand, that is the structure that was held to infringe in the first Graham-Jeoffroy litigation. This is shown—I don't know who made that, but that is an unreal position, because the nub is shown forward extending out of there. It never would be in that condition unless you would put a crowbar in there and flex it, push it apart, you see. I suppose the thing was drawn to make it visible rather than to show the operation.

* * *

Q. (By Mr. Gold) Now, as far as the movement of the shank or relative position of the shank and the plate member in the Jeoffroy SC-580, would you care to comment on that as compared to the 811? [956] A. Well, you could call it a Chinese copy, I guess. It is very similar.

Q. Now, we have another item of prior art on the Defendants' Exhibit 11. That is the Glencoe device. Would you point out any distinctions, if any, to the 798 structure from the Glencoe structure? A. In the Glencoe structure the hinged member is below the shank, as it was in the—it was on the opposite side of the shank from the 798 patent. It is below the shank. Outside of that difference the main mechanical elements are found in Glencoe as they are in this (indicating).

Q. Speaking of the mechanical elements, what is your opinion as to the presence of the individual mechanical elements of the 798 structure being present in the prior art? A. Well, I don't find the fulcrum idea in any of the earlier art; I characterize simple pivot members. The fulcrum is not present in any of those.

* * *

[957] Q. (By Mr. Gold) No, I will ask another question, Mr. Fenton. Now, as to the presence of the individual mechanical elements in the modern art, will you comment on that. A. Those elements that are shown here, they are all shown, I think, substantially in Glencoe and of course the mechanical elements are largely shown in the 811, may be one or two that are missing, and they are all shown in Jeoffroy SC-580.

Q. Now, as to their association or relationship, what would be your opinion as to the presence of the mechanical elements in the prior art structures? We might as well talk about the more modern art, I think. A. You are asking about the mechanical element of 798?

[958] Q. Yes, about the association and relationship of the mechanical elements of the 798 structure, what is your opinion about their presence in the modern art? A. As I have just stated, the element is pretty well present in Glencoe but the change is in the substitution or the movement of the pivoted member from below the shank, it is different in that respect.

Q. You heard Mr. Fishleigh's testimony about uniformity of bending stress and the length of the shanks in the devices we have here. Do you agree with him?

Mr. Morris: Object to that as too broad, not sufficiently pointing out the testimony about which you are inquiring, not sufficiently specific.

The Court: I think the question is sufficiently specific. That is his testimony on the test I presume—

Mr. Gold: No, sir.

Mr. Morris: That is what my objection is, Your Honor. It can be directed to the tests, it can be directed to—

The Court: If not directed to the tests the objection is sustained. That is the way I took it. I think it should be pointed out with more particularity.

Mr. Gold: Mr. Fishleigh testified relative to the shank shown here (indicating), and made some statement relative to uniformity of stress along the [959] length of the shank and I was asking Mr. Fenton as to whether or not he agreed with Mr. Fishleigh as to the uniformity of bending stress along the length of such shanks.

A. I don't now recall that he gave any such testimony, but if he did I don't agree with him. That is, do I understand uniformity of stress all along the shank?

Mr. Morris: Well, Your Honor, the defendant objects to the competence of any further testimony along this line.

The Court: The Court recalls the testimony. I don't know it is material whether he agrees with Mr. Fishleigh or not; might not be well taken since he doesn't recall Mr. Fishleigh's testimony. Of course you can ask the witness what his opinion is of the stress.

Mr. Gold: Your Honor, I think the witness misunderstood my question and was commenting about what I had said relative to Mr. Fishleigh's testimony.

Q. (By Mr. Gold) Mr. Fenton, what is your opinion regarding uniformity of bending stress in shanks under operating conditions such as the shank I just held up for you? A. Well, I am firmly of the opinion that the stress is not uniform in the shanks. It varies. There is a great deal of variation on whether rock is hit or obstruction [960] is hit, and increases toward the pivot point, I think, in general, it increases toward—as it approaches the pivot point and in most instances that was the point where the maximum stress would probably occur.

Q. Now, when you refer to a pivot point you are pointing to a pivot point in the structure shown in Defendants' Exhibit 21-A in the 798 structure? A. Yes.

Q. What is your opinion relative to the presence or absence of a high stress point in the shanks of devices in issue here, in operation? A. Well, I think these shanks are subject to terrific stresses, shock loads in actual plowing, not always but frequently. Just how those stresses will be applied to a shank is purely speculative, because you never know how a rock is going to be encountered in the soil. Sometimes the shank hits it on the edge and slides around it, sometimes it is a square portion of the rock, sometimes a round portion, and I am sure that is—the stresses in the shank will not be simplified. They are great undoubtedly.

Q. If a plow would strike a rock and tend to ride up over the rock, would there be a high stress point applied to the shank, in your opinion? A. Yes. Yes, indeed.

[961] Q. Can you tell us where that would be? A. Well, the maximum stress would probably in most instances be at this pivot point which I mentioned. But I can imagine conditions where it might be right back here at the bend in the shank. It depends on the shape of the rock and other things.

Q. Did you hear Mr. Fishleigh's testimony that there would be no difference in the flexing of the shank along the plate member when the shank is above from that which would occur when the shank was below the plate? A. Yes, I think I did hear that testimony.

Q. Can you tell us actually anything about any flexing that would occur in a structure such as the 798 device in operation? A. Reason leads me to believe that as the shank is moved upward by its contact with some immovable object, moved rearwardly and upward, there would be a high stress point just below this pivot, and that is in an upward direction at that point. Since that is resisted by this spring and the bolt, you will tend to have a flexing between them, between these two points, a downward deflection between those two points.

Q. Have you made any tests on any similar device that would tend to show that there was such flexing? A. Yes, we made a test in the Graham factory at Amarillo.

[962] Q. Can you tell us about that test? A. Well, this shank was mounted in a Jeoffroy clamp on a fixed frame, very heavy I-beam member, so it was quite rigid, and a hydraulic cylinder was placed on the point of the shank here where the tool normally bolts on, extending in a rearwardly and upwardly direction, and the hydraulic cylinder was capable of putting force on that shank. We used a dial indicator on the center at the bottom of this shank, under the face of the shank at the center point. By the way, I should say that this was a three-quarter inch shank.

The Court: I didn't follow you there, Mr. Fenton. Where did you place the dial?

A. Right here, beneath the center (indicating).

The Court: Very well.

A. That is independently mounted, of course, and so that the movement, any movement doesn't affect the mounting, and it registers with reasonable accuracy the deflection in the shank to the thousandth of an inch. Well, we placed up to a thousand pounds on this shank and secured a deflection of approximately thirty-five thousandths of an inch or one thirty-second of an inch approximately, in this instance. Then you could release the pressure and repeat it, and we did that enough times to indicate that it was pretty reliable [963] information.

Q. Could you tell us what type of pivot member you had in that test? A. It was a Jeoffroy clamp, pivoted—

Mr. Morris: I won't quarrel with that, it is a Jeoffroy HT-5.

Mr. Fishburn: Identified as Plaintiffs' Exhibit C.

Q. (By Mr. Gold) So there will be no misunderstanding, was there more than one test, Mr. Fenton? A. Well, we made several tests at this time, but we also made a later test in—I believe in the same case, but for a different purpose. The second test we made is to try to show and we did possibly show that the set screw in this second member would be loosened by this flexing. In that test we did it 25 times.

Mr. Morris: If you like, I will also stipulate that you made some subsequent tests with the Jeoffroy HT-5-A type, the set screw and the stirrup member.

Mr. Fishburn: Identified as Plaintiffs' Exhibit D.

Mr. Gold: We had a set screw in the loop portion as shown in the Plaintiffs' Exhibit D-1.

Mr. Morris: And let's complete the stipulation, that that was also a three-quarter inch shank.

[964] Mr. Gold: Yes, sir, that was a three-quarter inch shank.

Mr. Morris: All right.

Q. (By Mr. Gold) Now, Mr. Fenton, did you finish your testimony relative to the tests? A. I might add that in my own opinion the results were about what I would expect. I think it was reasonable.

Q. What was the extent of the flexing of the shank, and can you tell me how it flexed relative to the plate of the hinge member, if it did. A. Well, it moved away, moved away from the face of the hinged member by the amount that it flexed, more at the middle and less back at the end, of course.

Q. And the amount of that flexing was how much? A. Thirty-five thousandths of an inch maximum.

Q. Was the flexing such that in your test you could see the deflection by eye? A. Oh, very easily, yes, sir.

Q. Now, take the 798 structure and assume you were able to turn the plate and the shank over and put a pivot pin below—down below the lower part of the fixed member, so that we have the shank and plate member inverted with the shank above the plate member, what would be your opinion relative to flexing in that structure? [965] A. Do I understand that the other portion of the shank is the same relatively—in other words, the ground-working tool is in the same position?

Q. Yes, and you are to assume the forces would be applied upwardly on it. We merely invert the plate and the shank, turn it over and have the pivot below the plate member. A. In that case the tendency of the shank to flex—which is of course the same if you put the same load on it—is resisted by this plate element of the hinged member and it can flex, it just forces down against the plate member. We didn't make any tests on that. We didn't have the apparatus to make tests on that. It could be made, but we didn't do it.

Q. Now, Mr. Fenton, I have placed on the easel the Graham 798 patent drawing, Defendants' Exhibit 21-A. We have a Glencoe device, a commercial device, shown in Defendants' Exhibit 17, we have a drawing of a Glencoe structure in which the plate has been inverted, as was done here yesterday by Mr. Morris and Mr. Fishleigh. Can you tell us your opinion relative to the flexing of the shank relative to the plate member in the Glencoe structure, both the commercial and this reconstructed device? A. Where the shank is above the pivoted member and with a stirrup [966] at the rear, stress on the tool here will cause the shank to push downward on this fixed member so that essentially there is no flexing.

Q. Now, you are pointing to the drawing, Defendants' Exhibit 17? A. Yes.

Q. Now, can you tell us a little bit more the reason why you wouldn't find any flexing in the force of the shank above the plate member? A. The reason is that the forces are downward. The forces are upward on this shank at this pivot point, so on the plate member they are downward, and it just pushes against the plate surface of that hinged member.

Q. What is the function of the loop in the plate member in that particular action? A. That would restrain the shank from upward movement at that point. That and this bolt are the main members that take the whole force of the shank. It doesn't have a contact with the fixed member, so it pushes up against these two elements which in turn transmit the force to the fixed member.

Q. Now, do I understand your testimony relative to the Glencoe structure that your statement relative to the flexing would be about the same as you were stating that you would have in the Graham 798 if we inverted [967] the shank and the plate member, as I gave you the hypothetical case earlier? A. Yes, substantially the same.

Q. Now, what about the flexing of the shank in the area along the plate member in the Glencoe reconstructed device as shown in the Defendants' Exhibit 17-A? A. In this device the hinged member is placed above the shank, the stirrup extends down to a point below the shank and tends to restrain it there. A flexing in this point (indicating) will be similar to what we testified to over here, that the intervening space between the attachment and the stirrup will tend to flex downward, of course, by some amount.

Q. Mr. Fenton, I have placed on the easel drawings of the defendants' structure, the one showing the 650 series being Defendants' Exhibit 26, the one showing the 100 series being Defendants' Exhibit 27. Now, can you comment as to the relative forces that would be applied and as to the possibility of bending of the shank relative to the plate member in those structures? A. Take the 100 series first. The shank extends along the underside of the hinged member with a stirrup, a flat plate and two bolts securing it at that point. Also an attaching member here (indicating). When you get upward stress and backward stress on the shank, the tool, [968] this shank ought to flex downward in the center at this point (indicating).

Q. Now, comment about the 650. In your opinion would there be any difference in the tendency to flex in the 650 over the 100? A. No, no essential difference. This end is relatively freer than this (indicating).

Q. Now when you said this end, Mr. Fenton— A. The back end, the point of maximum stress in the shank, which is in this area (indicating).

Q. That is the 650 series you are pointing to? A. And I would expect that that shank would flex downward at this point (indicating), between that pivot and the bolt attachment.

Q. Can you give us any reason why you would expect it to? A. Because it is under bending movement, bending around this point of maximum stress. This is held rigidly at this point, and the tendency is for the shank to bow downward at this point in between those two.

Q. Now, you said this is rigid at this point and I believe you were pointing to the bolt on the 650 structure on Defendants' Exhibit 26, is that right? A. Yes. The point that I mentioned being rigid is the bolt attachment at the front end.

Q. Of the 650 series? [969] A. Yes, sir.

Q. Is there any material difference in the application of forces that might tend to cause bending in the 650 series from the 100 series? A. Do you mean in this portion of the shank (indicating)?

Q. Yes, sir, the portion of the shank under the plate. A. Under the plate. Yes, I think this plate and this clamping means with both—

Q. When you say "this plate" and "this clamping means," and you are pointing to the exhibit, the record doesn't show that. Would you please tell us which one you are pointing to each time. A. The 100 series, the plate at the rear with the two bolts can be clamped up very tight, and it might have an influence on the flexing.

Q. Would that have a tendency to increase or decrease the flexing, the extent of flexing? A. Actually it would have a tendency to decrease it at that point.

Q. Mr. Fenton, you have seen some of these types of plows in operation, haven't you? A. Yes, sir.

Q. From your observation of plows with spring clamps, what would be your opinion relative to the possibility of the bolts at the plate part in the 100 series [970] becoming loose in use? A. My observation and experience with this type of machine would indicate that they always work loose under heavy duty work. Unless the farmer or operator tightens them frequently they will work loose. I might add there that that is essentially true when the pivot points become worn and there is a little more movement. As a result the wear is in other parts of the clamp.

Q. Mr. Fenton, I have placed on the easel the claim chart, Plaintiffs' Exhibit M, and that is the one that shows the 100 series. I believe you were asked some questions the other day relative to claims and also as to mechanical elements. In comparing element 6 of Claim 1 with the defendants' structure, would you please read that element. A. "means having connection with the forward end of the shank and with the other end of the coil spring whereby the spring yieldably maintains said normal contact of the upper face of the plate portion of the shank attaching member with the underface of the fixed member to maintain the normal plowing depth of the ground working tool."

Q. Now, Mr. Fenton, it is possible I missed on my notes, but as far as the mechanical element that would be called for in that claim, do you find it in the defendants' [971] structure, the 100 series? A. The mechanical element?

Q. Yes, sir.

Mr. Morris: Which element are you talking about?

Mr. Gold: Element 6.

* * *

Q. (By Mr. Gold) Now, will you tell me in your opinion is the—I am asking the question over because of the confusion as to what we were talking about—in your opinion can you find the particular mechanical element that would respond to that element, that claim element, in the Deere 100 clamp? A. Not literally.

Q. Well, what about the mechanical equivalent? A. Actually the job is accomplished by the combination of the hinged member and the shank, which is bolted to the hinge member mechanically, that work together.

Q. In your opinion is the mechanical equivalent of element 6 of Claim 1 in the Deere 100 series? A. Yes, it is, that element.

Q. Now, if you will refer to Claim 2, which is Plaintiffs' Exhibit N, and also referring to the 6th element of the claim, did you find the particular literal reading of that claim in the Defendants' 100 series? [972] A. The situation is the same. Literally it doesn't agree, but mechanically the equivalent is there.

Q. Did you hear a definition of mechanical equivalent the other day? A. Yes, I heard it, but I don't think I could repeat it right now.

Q. Now, let's also look at Claim 1—

Mr. Morris: Mr. Gold, I am going to have to object to his testimony as to mechanical equivalents then, unless a definition is stated so that we may understand we all have in mind the same definition applicable to his testimony, and unless that be done I move that the previous answers as to mechanical equivalents be stricken.

Mr. Fishburn: I think the witness said he couldn't repeat the term and I don't think the objection is well taken in view of the fact that the witness said he couldn't repeat it.

Mr. Morris: I am not asking him to repeat it, I am asking that a proper definition be given so that we may confine the testimony within the confines of that definition.

The Court: Yes, I think that would be proper.

Q. (By Mr. Gold) Very well. Mr. Fenton, if we define mechanical equivalents as being something that is [973] substantially the same structure, providing substantially the same result in substantially the same way, in your opinion would the mechanical equivalent of element 6 of Claim 2 of the 798 patent be found in the Deere 100 series? A. Yes, sir, it certainly would.

Q. With that same definition of mechanical equivalents, what would your opinion be as to all of the elements of Claim 2 being present in the Deere 100? A. That is a pretty broad question. I think I can honestly testify that with that definition of mechanical equivalents they are all present, because it operates the same and functions the same.

Q. Now we believe we should go back to Plaintiffs' Exhibit M, which shows Claim 1 of the Deere 100 series, and with the definition of mechanical equivalents that I just gave a minute ago, in your opinion is the mechanical equivalent of element 6 present in the Deere 100 series, element 6 of Claim 1? A. Yes, sir.

Q. Considering Claim 1 on the 100 series clamp and the same definition of mechanical equivalents, in your opinion is each and every element of that claim present in the Deere 100 series? A. Yes, sir.

[974] Q. Now I have placed on the easel Plaintiffs' Exhibit L, which shows the Deere 650 series clamp, and also shows Claim 1 of the 798 patent. Using our definition of mechanical equivalents, in your opinion is element 6 of Claim 1 the mechanical equivalent of Claim 1 found in the Deere 650 series clamp? A. Yes, sir.

Q. In your opinion is the mechanical equivalent of each and all of the elements of Claim 1 of the 798 patent found in the Deere 650 series clamp? A. Yes, sir.

Mr. Gold: That is all.

The Court: We will be in recess until 1:30.

(Noon Recess.)

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[975] AFTERNOON SESSION, THURSDAY, MAY 10, 1962

J. C. FENTON resumed the stand and testified further as follows:

Re-Cross-Examination by Mr. Morris.

Q. Mr. Fenton, I would like to discuss with you just a moment this matter of the flexing of the shank in the forward portion that is up within the body of the clamp structure. Let's take a device like the Graham 811 device, which is shown here in the drawings, Defendants' Exhibits 14-A and 14-B, taken from the 811 patent, in which there is a shank member that is located on top of the fulcrum plate, the fulcrum plate lies underneath, the spring rod on that end (indicating). Now, where is the pivot point of that shank in the 811 structure? Is it up above or down below? A. Up above, where it contacts the fixed member.

Q. All right. So that we would have a point, wherever it is, or a line on the rear base of the body portion of that clamp, which constitutes the pivot point, is that correct? A. Yes.

Q. So that the force, whatever ground force there is that tends to rotate the shank, is upward and rearward, an upward component of that force against the point [976] on that frame member about the point on which it tends to rotate, is that correct? A. That is right.

Q. All right. Then of course the weight of the plow acting through that pivot point resists the tendency of the shank to go up, does it not? A. Yes, sir.

Q. And on the opposite end of the shank, acting through the lower plate, is a spring and spring rod which is the pressure that resists the tendency of it to rotate, is that correct? A. That is correct.

Q. All right. Now then, in that type of structure you have testified here that in your opinion there would be a tendency of the forward portion of that shank in the line between the spring rod and the point of pivot to flex downwardly, is that correct? A. I did that in other structures, but not in this.

Q. Well, is that true? A. Yes, that is true.

Q. Now then, in the 811 structure, as shown in the patent, I refer you to Fig. 2 of the drawing, there is a very noticeable clearance between the under surface of the fixed member and the upper surface of the shank itself, is there not? [977] A. That is right.

Q. Now, with that amount of clearance, as shown in the drawings, and also as you have seen it in the actual commercial structures, there is plenty of room for the shank to flex certainly more than thirty-five thousandths of an inch in its forward end, isn't there? A. I believe so.

Q. And you would certainly anticipate, based on what you have said heretofore, that it would flex at least that much, would you not? A. Depending on the load.

Q. Depending on the load, of course, assuming that you get a load here on the plow tool of sufficient strength to flex the forward end of the shank thirty-five thousandths of an inch. Is that correct? A. Substantially correct, I believe.

Q. All right, sir. Now then, the amount, magnitude of the flex in the forward end of that shank would depend upon the load which would cause it to tend to flex and the amount of clearance allowed to permit it to flex, would it not? A. Correct.

Q. So that if you opened the clearance here a quarter of an inch and you imparted a force sufficiently great on the rear, you could have a full quarter inch flex, [978] couldn't you, in the forward end? A. It is possible.

Q. Quite possible. In other words, the plate lying underneath the shank itself in its forward portion would not prohibit the flex of the shank, provided the clearances were adequate to permit it; that is true, isn't it? A. Yes, sir.

Q. All right. So that whether you have the plate located underneath the shank or above the shank, the magnitude of flex in the forward end of the shank will depend upon the clearances provided to permit it to flex and the forces which tend to cause it to flex? A. The fulcrum plate in this instance has no influence on the flexing, because it is removed from it.

Q. All right, so that whether the plate be above or below is utterly immaterial to the flex in the shank provided sufficient clearance is in the structure to permit it to flex, is that correct? A. In that particular structure only. That doesn't apply to other structures, does it? You didn't mean it to?

Q. I am asking you about this one, for the time being. A. Yes.

Q. All right. Let's transfer our thinking to Jeoffroy SC-580. The drawing is on the board, shown on [979] Defendants' Exhibit 11. It is, as you have already stated, quite similar to 811, with the shank above the plate.

Would everything that we have just got through saying about 811 with respect to the flex in its forward end be true of Jeoffroy SC-580? A. No, I don't think it would.

Q. Where would it differ? A. The shank in this place—of course we can't see the clearance back there on this one.

Q. You saw lots of them, you testified about them in the first case, didn't you, Mr. Fenton? A. Yes. But I can't see the clearance here.

Q. Well, let's get a clamp before us so we don't have to guess about it. I have in my hand now the Jeoffroy SC-580 clamp which has been introduced in evidence here. Will you check the clearances there, Mr. Fenton. A. Yes.

(Witness complies.)

Q. And they are certainly more than thirty-five thousandths of an inch, aren't they? A. Yes, quarter of an inch there.

Q. And it would certainly permit the shank to flex in the forward end, any magnitude of the amount that you would anticipate here, would it not? A. Yes, I believe so.

[980] Q. And the location of the plate portion below the shank would not prevent that shank from flexing, would it? A. Possibly at the end where—at the other end it might touch there.

Q. Which end? A. The front end.

Q. You mean it wouldn't flex at the front end? A. Yes, there may be a portion there where it might not.

Q. You wouldn't actually expect it to flex clear out to the end, would you? A. Some, very little.

Q. A very minor amount? A. Very minor.

Q. All right, sir. Now transfer your thoughts to 798 and let's for the moment disregard the language of the patent, which says that the shank and the pivoted part are held in constant continuous contact. Now then, in that structure—I have placed a drawing from the patent on the board, Defendants' Exhibit 21-A, as it is drawn, showing no clearances whatsoever, with the shank lying underneath the plate—where would your flex be? A. Throughout the length, from that stirrup to the bolt.

Q. And in what direction? A. Downward.

Q. Of course you will admit, will you not, Mr. Fenton, that [981] if this loop element were a machine tool type fitting, it would prohibit or certainly limit the flex of the shank, would it not? It would tend to limit the flex of the shank? A. I doubt it.

Q. Didn't you say this morning that if the bolt and strap on the Deere 100 was pulled up tight it would tend to lock the shank at that end? A. In that case you put a lot of pressure on with a wider plate. It is impossible, even though you machine this you have to slip the shank in.

Q. So you don't think it would have any bearing on it? A. No, no appreciable bearing.

Q. All right. Whatever the situation may be, though, there would have to be some clearance in order to permit it to flex, would there not? A. And to push it in there.

Q. Well now, we are not concerned about pushing it in now. There would have to be some clearance in order to permit it to flex, would there not? A. Yes, bend in that area, to bend in that area.

Q. Now then, let's look at it the same way we looked at 811 a while ago. Our point—let's put it on the blackboard. In 798 with the shank lying underneath the plate what is it that the shank pivots about? [982] A. Pivots about the pivot pin.

Q. And where is the pivot pin with respect to the shank? A. Above the shank.

Q. So that the point— A. Also above the stirrup.

Q. All right. So that the point of resistance to the pivoting action of the shank is located above the shank just the same as it was in 811? A. Yes.

Q. That is true, is it not? A. Yes.

Q. Now then, what direction would the shank tend to flex? A. You mean—

Q. In the 798? A. Downward.

Q. It would tend to flex in precisely the same direction as it would tend to flex in 811, wouldn't it? A. Yes.

Q. And would you anticipate that the magnitude of flex in the forward end of the shank would be substantially the same as in 811? A. The length of that section is very important there in flexion.

Q. Sir? A. The length of that section in flexion, and as I recall [983] the 811 is a little shorter, so it might be less, a little less flex.

Q. Solely because of the section of shank up inside the clamp, that is all? A. Yes.

Q. Given the same length of the forward portion of the clamp, though, you would anticipate that the magnitude of flex would be precisely the same or substantially the same as in 811, wouldn't you? A. I would think so.

Q. Is there anything in the world in this patent that tells you about the size of the shank or how much of it is up inside of the shank, what the length of it is in 798? A. No.

Q. There is not, and there is not in 811 either, is there? A. No, I was simply thinking of the models.

Q. So then in shifting from the 811 structure to the 798 structure we have neither changed the direction of flex in the shank nor have we changed the magnitude, have we? A. Not in that portion.

Q. In that portion of the shank, and that is what we are talking about, isn't it, Mr. Fenton? A. That isn't all I was talking about when I was testifying this morning. [984] Q. Do you want to talk about some other flex in the forward end of this shank now? A. Not in the forward end.

Q. Of course the flex back in the curve behind the clamp back to the ground, we have had that always, we had that back before we had any spring clamps, didn't we? A. Yes, but I don't know whether you are coming up to my improvements or changes. The more—

Q. Well, let's just come to them right now, and in particular this one. A. All right.

Q. One of the points which you say Mr. Graham has done in 798 to improve 811 or over 811 is that the structure achieves a more desirable flexing of the shank. All right. Now, we have just agreed, have we not, that there is no change in the direction of flex of the shank? We have agreed to that, haven't we? A. No, we haven't agreed to that. We have agreed to the flexing in that portion, yes.

Q. In the forward portion? A. Yes.

Q. All right, let's confine it to that for the moment then. There has been no achievement, no change of direction of flex in the forward end of the shank? A. That is right.

[985] Q. And there has been no change in the magnitude of flex in the forward end, has there? A. Not appreciably.

Q. Then where is it that the more desirable flexing has been achieved? A. It is achieved by the stirrup, which doesn't let it wobble so much. You don't get side flexing.

Q. Oh, do we want to shift the flex of this shank now from flex, as we have been talking about it for two days. to a lateral shift of the shank? A. I was talking about over-all improvements or change in—

Q. Let's confine, please, Mr. Fenton, confine our thinking to this more desirable flexing that has been achieved. The control of lateral movement of shank is not the flexing of the shank, is it? A. It causes the flexing.

Q. In this old sloppy 811 type structure where you had all that working around that we talked about, as Mr. Gold brought out here, you had a tendency of that shank to fishtail as it went through the ground, didn't you? A. That is right.

Q. And that was because of the absence of lateral support for the shank, wasn't it? A. Yes, correct.

[986] Q. That was not the flexing of the shank, was it? A. Certainly it is flexing of the shank.

Q. Well, where does it flex? Point it out to the Court, please. Where is the flexing that causes that? A. These drawings don't view it from the rear.

Q. Let's look at 811 over here now. A. This shank, because it isn't supported here—every one is under stress, is a flex.

Q. Do you mean out behind the clamp at the rear it does some fishtailing in 811? A. No, it does it in—in 811, certainly, yes, quite marked.

Q. Is that the flexing of the shank you are talking about? A. That is one of the flexings.

Q. And that has been controlled in 798 by doing what? A. By putting the stirrup around it here.

Q. And that makes the shank track better? A. Better, yes, sir.

Q. Of course that particular matter had been fully controlled in Glencoe, hadn't it? A. Yes, they had a similar element in Glencoe.

Q. So by providing—what you are saying to the Court then is that by providing the stirrup element in 798 he has controlled the shank and got a better flexing in that it doesn't have as much lateral play, is that what you are saying? [987] A. That is right, compared to 811.

Q. How about compared to Glencoe? He wouldn't achieve anything though in that respect, would he? A. No, I wouldn't think so.

Q. All right. Now, I want to confine our attention for the moment, please, Mr. Fenton, to this flex that has become such a monument here. You have in the past conducted some flexing tests in two devices. One of them is the Jeoffroy HT-5 structure, Plaintiffs' Exhibit C, with a three-quarter inch shank, which was the type of structure in evidence in the second of the Jeoffroy cases, the one in which this patent was first involved? A. Yes.

Q. All right. That is the first one. Then the second flexing tests that you have conducted were in a later modification of the Jeoffroy structure which had a set screw to hold the shank at the rear, as shown here in Plaintiffs' Exhibit D-1, that again being a three-quarter inch shank? A. Yes.

Q. All right. The first of those tests was conducted when, please? A. I think it was '56.

Q. And the second one? [988] A. My impression is we did it later in the same case, just went out there again and did it in the same case.

Q. All right. In any event, that is the two tests that you conducted and that is all that you conducted, isn't it? A. Yes.

Q. Will you tell us, please, sir, how you had your gauge, your dial—I don't know what part of it you call it particularly, the gauge that you used to measure the flex in the shank in that Jeoffroy structure, tell us how you set it up, please. A. It was mounted on an arm off of the train which extended out and under the shank, capable of adjustment.

Q. Did it come up to a point of contact on the underneath surface— A. Yes, sir.

Q. —of the shank member? A. Correct.

Q. And you gauged then your bending of the shank as it moved downward at that point against the gauge surface? A. Correct.

Q. Now, you did not attach your gauge to the hinge member itself, did you? A. No, sir.

Q. So that those tests told you absolutely nothing about the flex of the shank away from the hinge member? You [989] didn't even attempt to measure that flex, did you? A. Not by an instrument, no.

Q. And your testimony to this Court that the shank flexes away from the hinge member in 798 is dependent upon those tests made with a Jeoffroy structure in which you didn't even measure any flex away from the hinge member? A. We could see it.

Q. Oh, you say you could see it but you didn't measure it? A. Oh, you could very easily see it.

Q. What you have told the Court, though, and what your test actually shows, is that you had a maximum of thirty-five thousandths of an inch of bend in the shank from its normal position? A. That is right.

Q. Under a thousand-pound load, and that is all that you can say as far as measurement is concerned, isn't it? A. That is right.

Q. All right, sir. You have made no tests whatsoever on either of the Deere structures, and your idea that they would flex away from the hinge member is pure theory, isn't it? A. Yes.

Q. All right. And if it is true that the tests show in 650 that there is no flexing of the—I will put it this way, [990] Mr. Fenton. There is no way that you can deny that the shank in the 650 series does not flex away from the hinge member, is there? A. Not except as a matter of reason.

Q. But reason, as you have many times said before, sometimes doesn't check out in the field? A. That is true.

Q. The pure physical theory oftentimes doesn't check out when put to the test, does it? A. Well, that is a general statement.

Q. Well, it is true, isn't it? A. It all depends.

Q. Certainly it depends, and you are in no position to say otherwise, are you? A. No, except that I have seen much testing of steel and other devices in the laboratories and—

Q. Yes, but you have seen no testing of 650 or 100? A. I have not.

Q. All right. Now I would like to shift your attention, if I may, Mr. Fenton, to the prior art. Well, just a minute before we leave that. Do you regard the small degree of flex in the forward end of the shank that lies between the pivot point and the point of spring attachment to be of any significance or any importance to the functioning of a device such as 798? [991] A. Unless you are approaching the elastic limit, I think this flexing will reduce the maximum stress at the point of pivot there, where the maximum stress does occur. I think it will reduce that. I don't know how much.

Q. Do you think it is a substantial factor, a factor of importance in the functioning of the structure? A. Not a great factor, no.

Q. Not a great deal, and you so testified in the Jeoffroy case, in which you said that it was characteristic of the structure but that it was not in your opinion of any great importance, and that the device would operate substantially the same whether the flex was there or not, didn't you? A. Unless, as I just said now, unless you are approaching the elastic limit of these shanks, then I think it might be quite important.

Q. Well now, didn't you testify in the Jeoffroy case—let me read your testimony. A. I don't remember that testimony of course.

Q. Let me call it to your attention then and see if this is not what you testified to. Page 112 of Vol. 1, Case No. 15117, Fifth Circuit, beginning about two-thirds of the way down the page. I am omitting a sentence which is in another context, commencing: "Do you consider [992] this portion, this what you called the resilient action of the shank, Mr. Fenton, in the forward eight or nine inches of that shank that's up inside the mounting or bracket, important to the function of the device?

"ANSWER: Not too important. It is present, but not too important.

"QUESTION: It functions just as well as whether that were there or not, wouldn't it?

"ANSWER: In this particular case in this device?

"QUESTION: Yes, sir.

"ANSWER: I think it would essentially, yes."

That was your testimony in that case with respect to the Jeoffroy HT-5 structure, Plaintiffs' Exhibit C, was it not? A. Or it might be that the other clamp, there was one J-210, wasn't there? We had one J-210? But it doesn't make any difference.

Q. This was the first case and the only one in issue was the HT-5 like Plaintiffs' Exhibit C here? A. You may be right on that.

Q. You don't question that that was your testimony, do you? A. No.

Q. All right. Now then, Mr. Fenton, turning your attention to the prior art, on direct examination this morning you testified that in the Glencoe structure you found, [993] and I will take the Glencoe structure as it appears here on Defendants' Exhibit 11, that you found in that structure substantially all of the elements, mechanical elements as provided for in the 798 claims, in substantially the same relationship and would do substantially the same work, with one exception, and that was that the position of the shank and the hinged member were inverted? That is correct, isn't it? That is a correct statement of your testimony? A. Yes, I believe so.

Q. And we have just pointed out that it doesn't make any difference whether the plate is below or above the shank insofar as the flex in the forward end of the shank is concerned, haven't we? A. No, we certainly haven't.

Q. Will you agree to that? A. No.

Q. You won't agree to that? A. That is just contrary to my testimony this morning.

Q. What difference then does it make in the flex of the shank whether the hinged member is above or below, as in Glencoe? A. When the shank is above the hinge member the shank presses down on the hinge member and doesn't flex. When the opposite is true—of course those are both [994] in the same position in that drawing, but when the opposite is true the shank flexes away from the hinge member underneath.

Q. All right. Then are you saying, Mr. Fenton, that the sole distinction, insofar as substantial operation, substantial means of operation, and structure is concerned, between Glencoe and 798 is that the shank is above the plate in Glencoe whereas it is below the plate in 798? A. Well, that is the main difference in the two structures, principally.

Q. All right. And what does that do, what is achieved in 798 by inverting the position that is not achieved in Glencoe? A. There is a much better handling of the forces in the 798. The upward movement of the shank goes directly to the fixed member. In Glencoe it goes to that stirrup and to the bolt. It is very weak construction, considering the stresses that are called upon there to stand.

Q. Now then, just a minute, let's stop right there. Then you want to make a distinction on the basis that 798 reveals a stronger structure than Glencoe, is that correct? A. Yes, it does.

Q. How do you reach that conclusion, Mr. Fenton? What is [995] there in the patent that tells you anything about the strength of the structure? A. I am not looking at the patent, sir, I am look at the structure itself.

Q. You are not looking at a 798 structure, because there never has been one of them. What is there about the 798 patent that tells you anything about the strength of structure that is proposed? A. Well, I don't recall.

Q. There is nothing, is there? So then on that basis the strength of the device is not material, because there is nothing in the patent that says anything about strength, is there? A. We are looking at the structure here also, not only the patent.

Q. All right. You pointed out one difference now, and that is that 798 is a stronger structure than Glencoe? A. I believe it is, yes.

Q. You don't find anything in the patent that tells you anything about strength of structure though, do you? A. No.

Q. And strength of a structure depends upon the size and materials used in it, doesn't it? A. Yes.

Q. Now then, what else do you see as a distinction that is [996] achieved in 798 over Glencoe? A. Those are the principal things. I don't see any other.

Q. And since strength is out of the question, since the patent says nothing about that, then we return ourselves to the one point of distinction and that is that in Glencoe the flex of the shank is in a direction toward the plate member whereas in 798 the flex of the shank is in the direction away from the hinged member? A. And the hinged member is in a different location than 798.

Q. That is all the difference it makes, though, is it permits the shank in one case to flex—the 798 permits the shank to flex away from the hinged member, whereas in Glencoe the tendency would be to flex toward the hinged member? A. Yes.

Q. All right. Then that returns us, Mr. Fention, to the proposition then of what difference does that make in the flexing of the shank in the forward end. In Glencoe, if we have adequate clearance in the stirrup or loop member at the rear to permit the shank to flex in its forward end, then we would have the same magnitude of flex and the same direction of flex as in 798, wouldn't we? A. No, because they are reversed. The shank is in a [997] different position.

Q. Yes, but the direction of flex of the shank is the same, isn't it? A. No.

Q. Let's test that. I think you will agree that it is if you will just look at it. A. One is downward—

Q. Just a moment. Let me test this out for you. We will put Glencoe here on the blackboard. I will put our pivot pin. Of course that is a crude drawing but you understand it clearly enough, do you not? This point I am pointing to would represent our pivot pin, which is located below the hinge member, do you agree to that? A. Yes.

Q. Intermediate between that we have the shank which lies above the plate portion of the hinge member, attached to the hinge member by means of a bolt and nut, is that clear enough? A. Yes.

Q. Then at the rear we have the upstanding loop element which goes up around the shank to hold the shank at that point, is that clear? A. Yes.

Q. All right. Now then, as the ground forces are encountered [998] on the Glencoe plow tool we again have an upward component which tends to rotate the shank about the pivot pin, do we not? A. Yes.

Q. And we have a fulcrum point above the shank which resists that force, do we not? A. Yes.

Q. And in this instance that fulcrum point would be in the loop element of the hinge member itself, would it not? A. Yes, sir.

Q. And on the opposite side from that fulcrum point we have a spring which tends to pull the shank the opposite direction or to resist the rotation or tendency to rotate, do we not? A. Yes.

Q. Then between the fulcrum point and its forward point of attachment, whatever tendency there is of the shank to bend would be in a direction downward, would it not? A. Correct.

Q. All right, sir. So that whatever tendency of the shank there is to flex in Glencoe the direction of its flex is precisely the same as it is in 811, in SC-580 or 798, isn't it? A. Well, the direction, regarding up and down, is not—

Q. We will come to the other in just a moment. Do you [999] agree to that? A. Well, yes, they would both be downward.

Q. All right, sir, just like the other three that I have mentioned, is that true? A. Yes.

Q. All right. Now then, you want to say, though, that because the plate portion lies underneath the shank that it will not be permitted to flex, it will flatten out, and it can't flex? Is that your testimony? A. That is right.

Q. And of course, Mr. Fenton, I think you will recognize, if you will just give that a bit more thought, that that is incorrect, unsound conclusion. I have taken out the portion of the Glencoe shank and hinge member and I have it, holding it here in my hand, in the same orientation it would be in the clamp, am I not? A. Yes.

Q. And at the rear pointing toward you is the upstanding loop element which forms the fulcrum point? A. Correct.

Q. And whether or not the shank could flex in its forward end would depend upon whether there is adequate clearance between the shank and the plate portion for the shank to bend, is that true? A. No.

[1000] Q. It is not? A. No. In fact, the clearance will help it to flex.

Q. The greater the clearance the more it will flex? A. The more it will flex.

Q. All right. That is exactly the point. So that if there is clearance, as in this instance—do you have a steel rule, Mr. Fishleigh? So that in the Glencoe structure we actually have a clearance between the top of the shank and the bottom of the loop of between a 32nd and a 16th of an inch, don't we? A. Somewhere in there, in that particular model.

Q. In this particular model? A. Yes.

Q. So that certainly this shank could have adequate room to flex as much as thirty-two or thirty-five thousandths of an inch, which you found in the Jeoffroy type structures using the quarter inch shank, couldn't it? Is that true? A. Of course—

Q. Just a minute. Is that true, Mr. Fenton? A. Not precisely, no.

Q. It could not flex that much? A. Because it doesn't flex just here (indicating), it flexes along and part of it might be lying right against the shank and here it would be farther away.

[1001] Q. All right. The greater the load, the point of pressure moves backward along the shank, does it not? A. Correct, yes.

Q. So that there would not be any change in the magnitude of flex, it would only be in the point of flex? A. Distribution.

Q. Under some loads it might be toward the rear, under some loads it might be toward the front? A. Yes.

Q. And if we attached the bolt farther forward we would provide greater room for it to flex, would we not? A. I would say so, yes.

Q. But the magnitude of flex is dependent upon the clearances allowed and the direction of flex is dependent upon the fulcrum point, isn't it? A. Yes.

Q. All right. So that the net result is that in Glencoe the magnitude of flex permitted and the direction of flex permitted is precisely the same under the same given conditions as it is in 811, SC-580 and 798?

Mr. Fishburn: If Your Honor please, I don't believe that is the witness' testimony. If he is talking about direction it might be true, but this is a different situation. [1002] The Witness: He says he will take that up later.

Mr. Morris: Will you read my question, please. (Question read as follows:

"All right. So that the net result is that in Glencoe the magnitude of flex permitted and the direction of flex permitted is precisely the same under the same given conditions as it is in 811, SC-580 and 798?")

* * *

A. I don't agree with you, because to say that—they are all downward, but downward isn't a factor at all. It is the flex in relation to the supporting members, and in 798 it is away from the shank. In Glencoe it is [1003] against the shank.

Q. Oh, yes, we have been through all of that, Mr. Fenton, and nobody would question that— A. Nobody.

Q. —direction relative to the plate in one is against the plate, in the other toward the plate. A. That is right.

* * *

Q. (By Mr. Morris) In the performance of the shank it makes no difference because the magnitude of flex permitted and the direction of the flex permitted is the same, isn't it? A. No.

Q. Point out where the difference is, please. A. You are depending, in the Glencoe, on that clearance, and the clearance is indefinite. You are saying that in 798 there has to be a machined spacing there.

Q. No, I didn't say it had to be. I just merely asked you if you had that kind of a situation. [1004] A. The clearance in this particular sample of Glencoe is rather larger than I would expect. Maybe if it is less there would be a different flexing effect.

Q. What would be the magnitude of flex that you would anticipate in the 798 structure if one of them was ever built? A. Quarter of an inch.

Q. A quarter of an inch? A. That is, if you put four thousand pounds on it.

Q. Have you ever seen one in anybody's device that you have measured a quarter of an inch in? A. Well, we had a 32nd in a thousand pound load on a three-quarter inch shank.

Q. You have volunteered many times here, of course, that Jeoffroy HT-5 is supposed to be a Chinese copy of 798, and this is one that you say is sure enough in accordance with 798, don't you? That is what you testified before? A. Yes.

Q. That is still your view, isn't it? A. Yes, in most respects.

Q. And the maximum from a thousand-pound pressure on a three-quarter inch shank was a thirty-five thousandth of an inch, and yet you want to tell the Court here that you would anticipate one of those things flexing [1005] a quarter of an inch in that area? You don't really want the Court to believe that, do you? Of course you don't.

Mr. Fishburn: Let the witness answer.

A. Under tests—the tests that Mr. Fishleigh conducted are not shock loads, you see, they are steady loads; there is a terrific difference between a shock load and a steady load.

Q. Yes, but the amount of flex depends upon the total magnitude of the force, doesn't it? A. Yes, and the total magnitude of a shock load may be tremendously different than the one you measure.

Q. It may be 4,000 pounds or it may be a thousand pounds, and whether it hits quick or hits slow, the same total force will bend the shank the same amount, won't it, because it is the number of pounds that flexes it? A. MV squared is the essential element.

Q. Well, yes, but that is dependent— A. You see, the velocity of the stress, which is the shock load.

Q. And it ends up in so many pounds of force on the shank? A. Pounds isn't the only part of it though. That is the point I am making.

Q. But in any case do you want to tell the Court that you would anticipate in one of these devices the shank [1006] would flex a quarter of an inch in that forward end? A. Well, I think that is certainly extreme.

Q. And when you said back in the Jeoffroy case several years ago and when you said awhile ago that you didn't really think that the flexing within that forward portion was important to function, you meant that, didn't you? A. Well, we were talking about different things then, arguing different things, you remember?

Q. No, I don't remember that, Mr. Fenton. We were talking about just one clamp, Jeoffroy HT-5. A. We were talking about tightness of set screws and those things.

Q. Oh, yes, I recall that you testified that the Jeoffroy HT-5 had the movement, and so on, that the old 811 had in it. But that is not what we were talking about in these questions I asked you awhile ago, that I read to you, was it? A. Well, I am not sure whether you have oriented it properly, that is, as regards this problem. You just read a section of the testimony.

Q. Let's don't have any doubt about it, Mr. Fenton. (Reading) "Do you consider this portion, this what you called the resilient action of the shank, Mr. Fenton, in the forward eight or nine inches of that shank that's [1007] up inside the mounting or bracket, important to the function of the device?

"ANSWER: Not too important. It is present, but not too important.

"QUESTION: It functions just as well whether that were there or not, would it?

"ANSWER: In this particular case in this device.

"QUESTION: Yes, sir.

"ANSWER: I think it would essentially, yes."

A. You read the same part. I thought perhaps the basis for it might be a little different.

Q. Is there any doubt in your mind that we were just talking about one structure, Jeoffroy HT-5? A. No doubt about that, but I don't know the orientation of the argument at that time.

Q. All right. Now, Mr. Fenton, you have characterized the prior art here as ancient art and as modern art. How far back would you go to class it one way or the other, ancient or modern? A. I said that I classed it horsedrawn and tractor-drawn or heavier tools. One of them, Traeger, is not too old, 1941.

Q. Traeger you couldn't possibly classify as ancient art, could you? A. No, you surely couldn't, on that basis. There are a lot [1008] of devices in India that are today—they are ancient art.

Q. Yes, but this is not in India, it is here in the United States and it is in a patent. A. That is in Australia.

Q. But it is here in the courthouse in the United States disclosed to us? A. Yes, but intended for horses.

Q. And shows the date of 1941, doesn't it? A. Yes.

Q. Now, then, the thing you said you didn't find taught in the ancient art was the idea of a fulcrum plate? A. That is right.

Q. You classified the ancient art as art in which you merely had a pivoted shank, resisted by a spring, isn't that right? A. No. I said that these were examples of ancient art and they all were simple pivoted members.

Q. Well now, is Traeger, 1941, a simple pivoted member? A. It certainly is.

Q. Does it not have a fulcrum member? A. In no sense of the word.

Q. What is it that the shank is attached to and about which it pivots? A. It is attached to another—about which it pivots?

[1009] Q. Yes, sir. A. It pivots around that green pivot pin, which is mounted on the other spring.

Q. Well, it pivots around a pivot pin, does it not? A. Yes.

Q. And the shank is attached to a shank attaching member or pivoted member by means of a rivet or fastening means, isn't it? A. Yes.

Q. And what is it that transmits the load of the shank into the pivot pin? A. The attaching member of the plate that is fastened on there.

Q. The load—the rearward pull of the shank, by means of its attachment to the hinge member through the rivet, is transmitted into the hinge member and in turn to the pivot pin, is it not? A. There is no hinge member there.

Q. What is the green member if it is not a hinge member? A. Well, it is a plate that supports the pivot pin.

Q. Well, does it pivot with the shank? A. No, I don't think so.

Q. From reading the drawings can't you see— A. That little plate there probably is fixed and the shank pivots in between it.

[1010] Q. Then you don't understand the Traeger disclosure as showing a pivoted member to which the shank is attached? A. Why, certainly, the shank is pivoted.

Q. Oh, the shank itself is pivoted? A. Yes, indeed.

Q. Where, please? A. At that pin (indicating).

Q. This rear portion of the shank is itself pivoted? A. Well, through that little attaching means.

Q. It is pivoted only in that it is attached to the pivot member, which in turn is pivoted about the pivot pin, isn't it? Isn't that true? A. Well, that is an awfully thin distinction. I don't see any.

Q. Well, it is true, isn't it, Mr. Fenton? A. Not necessarily true. You must have an attaching member. You can't have a pivoted shank without an attaching member. That is self-evident.

Q. Of course you pointed out in Moore this morning that—I would like to get the drawing before you—you pointed out in Moore that we have a direct pivoted shank with no shank attaching member? A. Yes.

Q. Now that is a true direct pivoted shank in which the [1011] shank itself— A. Just as much of an attaching member there as there is over here (indicating). See it there, it extends across between those two members.

Q. Then what distinction do you make for a direct pivoting shank as compared to a shank which is pivoted by means of a shank attaching member? What distinction do you make? A. I didn't make any distinction on that point.

Q. What is the distinction you want to make then? A. The distinction I made was that in Graham 811 we have a fulcrum plate which mounts, transfers the forces from the shank to the fixed member. That is the element that isn't present in this ancient art.

Q. That is what the patent calls it, is a fulcrum plate? A. Yes.

Q. And I am entirely willing to accept that terminology. A. O. K.

Q. Now, let's define what that fulcrum plate, as you see it, does in 811. It transmits the pressure of the shank rearwardly to the pivot point and permits it to pivot. That is it, isn't it? A. Yes.

Q. And that is all, isn't it? A. It is mounted on the fixed member there. This must be [1012] mounted on the fixed member.

Q. Of course the pin must be mounted on a fixed member to resist— A. Yes, that is what it does.

Q. But it transmits the rearward pull of the shank through the pivoted member into the pivot pin, doesn't it? A. Yes.

Q. And in turn of course from there into the main body of the clamp? A. Correct.

Q. In Traeger does the rivet which attaches the shank to the pivoted member transmit the rearward pull of the shank by means of that rivet into the pivoted member and in turn into the pivot pin? A. In a different way, however.

Q. Does it do that, Mr. Fenton? A. Well, it should if the thing functions.

Q. All right, [illegible]. So that in the process of transmitting rearward thrust of the shank into the pivot pin, the pivoted member in Traeger does it precisely the same as the pivoted member in 811, doesn't it? A. Does that swing, that member?

Q. Do you not understand the art, Mr. Fenton? A. Does that swing?

[1013] Q. You are the expert here. A. Then it isn't a fulcrum plate if it doesn't swing.

Q. Do you understand the art, Mr. Fenton? A. Certainly.

Q. Well, does it or doesn't it swing? A. No.

Q. It does not pivot? A. Not that attaching—

Q. You don't understand that the green member called a shank attaching member pivots along with the shank? A. I am sure the shank does.

Q. Have you read the specifications? A. Yes.

Q. Would you like to refresh your memory about it? A. No.

Q. How do you suppose that rivet in this dotted line here which shows it in a rocked position, what do you suppose that rivet is doing off down there with the shank if it doesn't come along with some other part of it? A. Well, it is a pretty far, imaginative thing to claim that that is a fulcrum, isn't it?

Q. Mr. Fenton, you have defined the fulcrum plate and what it does, and I merely want to know if the pivoting shank attaching member in Traeger doesn't do precisely [1014] the same thing in transmitting that thrust of the shank into the pivot pin. A. I don't think so.

Q. You don't think so. All right. Well now then, let's come on to the other modern art. Of course you want to talk about the days of 811, when it was devised, but the point of time in issue here is when 798 came into existence. A. Yes, sir.

Q. As of that date there existed, of course, as parts of prior art, Graham 811, Jeoffroy SC-580, and Glencoe, so that when we come to the alleged date of conception of 798, the principle of a fulcrum member which transmitted the loads of the shank into the pivot pin, and to the other portions of the structure, were completely before us, were they not? A. Those that are shown here, yes.

Q. And nothing was done to change the principle of the fulcrum member in any way whatsoever in 798 except to invert its position, was there? A. Yes, that is right.

Q. That is all? A. Yes, sir.

Q. All right. Every single mechanical element that is present in 798 was present in the art, wasn't it? [1015] A. In the modern art.

Q. In the modern art that preceded it? A. Yes.

Q. And every single function— A. Well, wait a minute. Yes, I think they are all present.

Q. And every single function performed or which you would expect to be performed by the 798 structure was present in the modern art? A. No, not—in a different way.

Q. What function was not present? A. The improvements that we suggested in 798 over 811 certainly were different, weren't they?

Q. Different from 811, but you must consider the rest of the art, mustn't you, Mr. Fenton? A. Well, all right. The other art—Glencoe, we have already gone over that, that there is a reversal of parts there.

Q. Let's take the additional things. I told you awhile ago we would come to them. The additional things that you say were present in 798 that were not present in 811 or were an improvement over 811. No. 1, longitudinal movement of the shank relative to the pivoted member was eliminated by fastening the two together with a bolt. That is your No. 1? A. Yes.

[1016] Q. That had been fully accomplished in Glencoe, had it not? A. Yes.

Q. No. 2. The spring was relieved of the shank pulling load. That was accomplished by fastening the plate and the shank together by the bolt at the forward end and freeing the spring rod from the load that it had to bear in the 811 structure, wasn't it? A. Where is that in there?

Q. In Glencoe the spring rod bears no part of the pulling thrust of the shank, does it? A. No.

Q. And neither does it in Jeoffroy SC-580? A. No.

Q. That is correct. All right. The third element you have eliminated you say in 798 as compared to 811, you eliminated the wear at the rear by putting the shank below the plate and the plate between the shank and the fixed member so that the shank would not rub on the fixed member? A. Correct.

Q. All right. That was fully accomplished in Glencoe by a fixed attachment of the shank to the pivoted member and a location of the pivot pin so that there would be no rubbing contact of the shank with any part of the fixed member, wasn't it? [1017] A. Do you have the fixed member of Glencoe there?

Q. I do, sir. I have assembled it in its normal position, and the spacing in relationship to the pivot pin is such that there is no possible rubbing contact of the fixed member, is there? A. I was seeing whether this could contact if—

Q. But by the time you reached that point you would be way beyond the limit of your spring and have a solid structure, would you not? A. You have a very long spring in this model.

Q. You want to check that out? A. I don't think there is any contact.

Q. All right. So that that feature that was accomplished in 798 had been fully accomplished in Glencoe? A. Yes.

Q. All right. The next one was that the shank was arranged to pivot around the pivot pin rather than about a point on the rear of the fixed member? Of course that is part of the elimination of the wear contact, but that is one you did state, is it not, the shank was pivoted—arranged to rock about a pivot pin? A. I don't think I stated that, but then it does rock around a pivot pin.

Q. It does rock around a pivot pin, whereas in 811 it had rocked about a rear surface on the rear of the clamp [1018] itself and that was the wear producing element, wasn't it? A. However, the hinged member in the 811 rocks around the pivot.

Q. Oh, yes. Well now, if there is any difference, in any event, by providing a complete rocking pivot around a pivot pin, then that was fully accomplished in Glencoe, wasn't it? A. It is definitely provided for, yes.

Q. Then your fifth item of improvement of 798 over 811 was that the lateral movement of the shank was restricted by the stirrup, that is correct, isn't it? A. Yes.

Q. That had been fully accomplished in Glencoe, had it not, by a substantially similar stirrup merely in an inverted position? A. Yes, it would function about the same.

Q. And the other, the achieving of a more desirable flexing of the shank, we have been over in full already? A. Quite thoroughly.

Q. So that in the final analysis there is only one thing that we can say for 798 over Glencoe, and that is that there is a different direction of flex of the forward end of the shank relative to the hinged member? A. That is right, yes.

[1019] Q. And in this entire 798 patent history, in its specifications, in its claims, in its drawings, and in its history through the Patent Office, there is not one word or one disclosure or one claim for such a direction of flex relative to a hinge member, is there? A. No, there is no mention of flexing.

Q. I have taken again from the file wrapper of the 798 patent some of the—well, let's start ahead of that. When we come to consider claims and mechanical elements of claims of course we must pay some attention to the wording of those claims in order to arrive at a construction, must we not? A. Yes, some attention, sir.

Q. All right. I would like to hand you a hypothetical claim which I have marked as Defendants' Exhibit 7. Let me give you the carbon copy, please. I would like for you to track with me, if you will, a claim such as that to test its application to some structures.

Mr. Gold: If Your Honor please, this exhibit shows here some hypothetical general claim. There is no claim in issue like this, there is no indication that such a claim is in the file wrapper, from what I understood so far from Mr. Morris, and I would like to object to some hypothetical wording that has no place in this case at all.

[1020] The Court: I guess first you had better let him state his hypothetical question and then make the objection.

Mr. Morris: Your Honor, I don't propose to ask any hypothetical question. I am presenting a hypothetical claim for the purpose of testing with this witness claim language in terms of mechanical elements.

The Court: If it is solely then for the purpose of testing the witness's knowledge, the objection is overruled.

Q. (By Mr. Morris) I have handed you what we will call a hypothetical general claim, I don't assert it is in any of these applications.

We start off with an introductory statement: "In a plow having a transverse frame and a ground working tool provided with a shank adapted to rock relatively to the frame when the plow is in operation in a foreward direction." Now, you recognize that language, of course, as being the same kind of language as introduced in the claim in suit, don't you? A. Yes.

Q. I would like for you to take this generalized claim with me and see if we can apply it to the Glencoe structure. I would like you to consider the Glencoe [1021] structure as it actually is as shown on Defendants' Exhibit 17. We of course have a plow having a transverse frame and a shank adapted to rock relative to the frame. We have that, don't we? A. Yes.

Q. Then pass to the next introductory part: "a mounting for attaching and supporting the shank of the ground working tool from the frame." We have that, don't we? A. That "from the frame" doesn't seem right; to the frame.

Q. All right. You want to change "from" to "to"? That suits me. I have no objection to changing the word. A. Isn't that more correct?

Q. That is perfectly all right, let's just change that word "from" to "to" then in that introductory part. We would have that then in Glencoe, would we not? A. Yes.

Q. Element 1, that is this mounting having element 1, "a part adapted to be fixed to the frame," do we have that? A. There surely are some parts but this isn't specific enough, doesn't tell any—

Q. Do we have a mounting having "1, a part adapted to be fixed to the frame," in Glencoe? A. "Said mounting including a part." Yes, certainly.

[1022] Q. "A part adapted to be fixed to the frame," we have that, don't we? No. 2, "a pivot pin on the fixed part." Is that present in Glencoe? A. It isn't under said mounting. The pivot pin isn't under said mounting. We are talking about said mounting up there.

The Court: He is just asking you relative to these questions here. There is no controversy for the purpose of bearing on any ultimate issue in this case respecting the element of the 798 patent or any other patents, as I understand it, and it is admitted only for the purpose of affecting the credibility or the qualifications of the witness.

Mr. Morris: It is perfectly all right. We will come forward from this point.

A. You are asking me whether there is a pivot pin present, is that it?

Q. (By Mr. Morris) I am asking you whether in Glencoe we have a pivot pin on the fixed part of the clamp. A. No.

Q. You do not have it? A. Not on the fixed part.

Q. The pivot pin is not on the fixed part of the clamp? A. You are pointing to the pivot part. Yes, it goes through the fixed part.

[1023] Q. All right. Element 4, "means for attaching the shank of the ground working tool to the movable part so that the shank and the movable part will pivot together around the pivot pin." Is that present in Glencoe? A. Yes.

Q. All right. Element 5, "spring means having connection with the fixed part and shank to permit the shank to rock and return to normal position." Is that present? A. I would think so, yes.

Q. All right, sir. So that, Mr. Fenton, if we had the patent claims specified in language of that sort—

Mr. Fishburn: Just a minute, Your Honor. I think the credibility of the witness has been tested by his recognizing the elements. Now he is going beyond that point, in my opinion.

The Court: Let him go ahead and finish his question.

Mr. Fishburn: All right, go ahead and finish it.

Q. (By Mr. Morris) If we had the mechanical elements of a claim defined in this language, as I have set them out in this hypothetical general claim, you would certainly find them all present in Glencoe, would you not?

Mr. Fishburn: I object to the witness [1024] answering that because it goes beyond the credibility of this witness. He has answered that he recognized the elements of the claim, and that is what he asked him for. That is what this exhibit is for. Anything beyond that is improper.

Mr. Morris: I am not testing credibility, I am testing qualification, Your Honor.

Mr. Fishburn: What is the difference?

Mr. Morris: I think there is a vast difference. I think mechanical elements specified broadly, as in this fashion, I am entitled to ask this witness whether or not they would be present, and I will move forward to some more points. It bears upon his power to interpret mechanical language.

The Court: That goes to the very issue in this case as to the particular specifications mentioned in the patent. I don't see where it has any probative value at all in construing particular claims of the 798 patent, because any claim could be stated probably in such general language as to cover almost any type of these devices. I don't see where it helps the Court out any, though, in arriving at the ultimate issue in this case.

Mr. Morris: If you will permit me I will take it forward. I don't want to state my conclusion [1025] until I have had a chance to ask the witness a question. But if I don't connect it up the Court can strike it out.

The Court: Well, I am certainly at this time in doubt about the admissibility of this type of evidence. I will let you put it in on the conditional basis that if it is not admissible it will be stricken from the record.

Mr. Morris: I am satisfied with that.

Q. (By Mr. Morris) Mr. Fenton, returning to my question then, if the mechanical elements of a claim were stated in this broad fashion, as I have stated them there on Defendants' Exhibit 7, you would certainly find them all present in Glencoe, would you not? A. Yes.

Q. Now then, I would like for you to consider Claim 1 from the file wrapper, the initial Claim 1, which was rejected and canceled. I have that set out on Defendants' Exhibit 8-A. I would like for you to again check through that claim with me and see if we can find all those mechanical elements present in Glencoe.

Introductory portion of course is:

"In a plow having a frame and a ground working tool provided with a shank adapted to rock relatively to the frame when the plow is in operation in a forward [1026] direction." That is present? A. Generally, yes.

Q. "A mounting for attaching and supporting the shank of the ground working tool from the frame including," that is present, isn't it? That is, a mounting to do that general job? A. Yes.

Q. Including element 1, "a part adapted to be fixed to the frame." Is that present? A. Fixed part is there certainly.

Q. "2. A part pivotally mounted on the fixed part." If we stop right there it is present, isn't it, in Glencoe? A. "Part pivotally mounted on the fixed part."

Q. Yes. A. Yes.

Q. "Having a plate portion extending forwardly from said pivotal mounting along an end portion of the shank and in movable engagement with the fixed part." Is that present in Glencoe? A. Yes.

Q. Continuing the element, the next limitation of the element, "means on the pivotal part embracing the end portion of the shank," is that present in Glencoe? A. Yes.

Q. Then the third element. "Resilient means interconnecting [1027] said parts and engaging the end portion of the shank to hold the pivotal part in yielding contact with the fixed part so that when the shank is rocked the end portion of the shank will cause the pivotal part to move away from the fixed part along said end portion of the shank and back to normal position with said plate portion in contact with the fixed part." Is that present in Glencoe? A. I believe it is.

Q. All right. Now then, if the claims of this patent that are here in issue were broadly stated as they were stated in that rejected Claim 1, then of course they would read on Glencoe, would they not? A. Thus far.

Q. All right, sir. Now then, I will not consider any more of them. I think that is adequate. Would you think it would be a fair conclusion, Mr. Fenton, to say that then if the present claims are to be distinguished from the prior art, and in particular Glencoe, it must be upon the basis of some specific language of those claims which defines a structure differently from what it was defined in the rejected claim we have just considered?

Mr. Gold: May I have that question read back?

(Question read.)

[1028] A. Well, I don't understand the claim language sufficiently to answer that question. Seems to me that is one for you folks to settle between yourselves.

Q. Mr. Fenton, the point is, you have undertaken to construe claim language and apply it to structures here as an expert witness in this case, and you have just agreed with me that if the language is broad as it was in the rejected Claim 1 that it would apply to Glencoe. Now, don't you think from just plain reason that if these present claims are going to be distinguished from Glencoe in any way it must be on the basis of some additional specification of structure that has been brought in here? A. I don't follow you.

Q. You don't comprehend that? A. No.

Q. All right. Well, this morning you said that you find that Glencoe has substantially the same elements in substantially the same arrangement, doing substantially the same work, as in 798, as the elements in 798. A. I don't think I ever said that, use of it.

Q. Isn't that the conclusion you reached? Isn't that true? A. Part of it is true but not all of it.

Q. You won't agree with that in full? [1029] A. No. It seems to me you went a little too far there.

Q. Wherein is that not true? A. I would have to have it read again.

Q. That in Glencoe you have substantially all of the mechanical elements performing substantially all of the functions and achieving substantially the same result as the mechanical elements in 798 as defined in the Claims 1 and 2?

Mr. Fishburn: If Your Honor please, I think that is getting into repetition, I think it has been gone over two or three times with this witness.

The Court: It might be somewhat repetitious. I think the question is proper. I don't know that the question has been answered in full; may have been answered in a series of other questions.

Mr. Fishburn: In connection with flex, and so forth, the witness pointed out the difference at least twice.

The Court: You may answer the question.

A. On second reading of that, or on the rereading, you didn't say the same arrangement of parts, you said the same mechanical elements, didn't you?

Q. (By Mr. Morris) Yes, sir. A. Then I think what you say is substantially true.

Mr. Morris: All right. That is all.

[1030] Mr. Morris: We offer in evidence the additional two exhibits, Defendants' Exhibits 7 and 8-A.

The Court: They will be admitted conditionally on the same basis on which the other exhibits were received in evidence.

(Defendants' Exhibits 7 and 8-A Were So Received in Evidence.)

The Court: We will resume the hearing on this case at 2 o'clock tomorrow afternoon. * * *

(Adjournment.)

[1031] AFTERNOON SESSION, FRIDAY, MAY 11, 1962

Mr. Morris: Your Honor, before commencing testimony, we have worked out stipulation for the appearance of Deere & Company as defendant and it has been signed and handed to the clerk.

The Court: Very well.

(Plaintiffs' Exhibits R, S and T Were Marked for Identification.)

J. C. FENTON, resumed the stand and testified as follows:

Re-Direct Examination by Mr. Gold.

Q. Mr. Fenton, we have placed on the easel three pieces of paper that have been marked Plaintiffs' Exhibits R, S and T. Will you tell us what is shown on Plaintiffs' Exhibit R? A. This is a sectional view of the 798 clamp in the static position, that is, without load being applied.

Q. And tell us what is shown in Plaintiffs' Exhibit S. A. This shows the same clamp at the full deflection position of the spring.

Q. What is the situation relative to any clearance shown in the stirrup portion in both Plaintiffs' Exhibits R, S and T? A. Well, a small clearance is indicated, enough to permit [1032] the shank to be inserted.

Q. Now tell us what is shown in Plaintiffs' Exhibit T. A. In Plaintiffs' Exhibit T is shown the deflection of the shank between the two points of support by a dotted line drawn down below the bottom of the shank and also at the top of the shank, this line indicating the direction rather than the amount of deflection.

Q. And how did the dotted lines get on that particular exhibit? A. This is a result of our test of deflection on a similar shank and our experience, perhaps, in the art.

Q. Did you place the dotted lines on that drawing yourself? A. Yes, I did.

Q. Could you tell us whether or not these three charts would have any bearing as to showing what you may have been testifying to in the last few days? A. Yes, I think they are substantially or precisely in accord with my testimony on the same subject during the last few days of the trial.

(Plaintiffs' Exhibits U, V and W Were Marked for Identification.)

Q. (By Mr. Gold) Mr. Fenton, I have now placed on the easel some sheets of paper marked Plaintiffs' Exhibits U, V and W. Will you tell us what the Plaintiffs' Exhibit U shows. [1033] A. This shows a sectional view of the changed 798 clamp with the hinged member inverted, that is, the hinge member has been placed below the shank rather than above, as it is in the regular structure.

Q. In this particular drawing, Plaintiffs' Exhibit U, the shank is spaced downwardly from the part of the fixed member underneath the H-beam. Can you tell us why that was done? A. Well, that was done to avoid interference with the upper side of the stirrup as the shank was stressed, flexed.

The Court: I didn't quite follow you on that last explanation.

Mr. Gold: If I may, I will tell you. When it was inverted, the stirrup member—merely turning it over in the same relative position as in the Plaintiffs' Exhibit R, the stirrup would be against the rear side, rear edge of the fixed member, so in order to have it pivot it had to be moved down so there would be a little clearance there and it could swing.

Q. Now, Mr. Fenton, what is the situation relative to the shank in Plaintiffs' Exhibit U? A. The shank is located above the hinged member.

Q. And as to the clearance in that structure, what is the situation? [1034] A. You refer to the clearance at the stirrup?

Q. Yes, sir. A. In the drawing it was tried to indicate the same clearance that we had in the other view, a moderate amount of clearance.

Q. And is there any force being applied to the shank in Plaintiffs' Exhibit U? A. No.

Q. Now, tell us what is in Plaintiffs' Exhibit V. A. This shows the clamp under stress position, and fully depressed, and what would be the maximum force on the clamp.

Q. And what is the position of the shank in that view as compared to the position in Plaintiffs' Exhibit U relative to the plate member? A. Well, the shank is in the same position above the plate.

Q. Now tell us what shows in Plaintiffs' Exhibit W. A. On this Exhibit W we have endeavored to show by a similar dotted line the flexing of the shank.

Q. Will you step over to the easel and point out what you are referring to. A. You can see it (indicating). We have shown a dotted line first that shows the tendency of the shank to flex downward against the hinged member, first of all [1035] to take up the clearance which—as the tool works in the ground there is an upward movement and force on the stirrup member which raises it in amount equal to the clearance. Then the force is continued and the shank at the point between the stirrup and the bolt here tends to push down on the fixed member and the point of contact will move backward to a point where there will be an equilibrium there and the greater the force the farther back this contact will move until the forces are in equilibrium. We have tried to show the same movement on the upper edge of the shank to indicate that if this is flexed downward to contact the fixed member there will be a slight deflection in the top of the shank.

Q. Mr. Fenton, I believe you said to contact the fixed member. Did you mean the fixed member? A. If I said that it was erroneous. Contacts the hinge member, the plate.

Q. Now then, how would the stress compare as to the arrangement of the structure shown in Plaintiffs' Exhibit T as compared with Plaintiffs' Exhibit W, as to location? A. In Plaintiffs' Exhibit T the stresses in this central portion of the shank will be maximum at the point of pivot just where the shank enters the stirrup and they [1036] will be distributed somewhat throughout that length. Possibly the largest stress would be right in the center of that flexed portion.

Q. What about the stress locations in the form shown in Plaintiffs' Exhibit W? A. The stress in this Exhibit

W will—as the shank is pressed down against this hinged member, there will be little or no stress on the part that is firmly in contact with the plate member. At the point where the shank is away from the plate member there will be an area of higher stress and also a similar high stress where it enters the—

Q. When we said stress we were referring to bending stress? A. Bending stress within the shank itself.

Q. Resume the witness chair now, please. Have you refreshed your recollection as to how the dial indicator was mounted on the test in the flexing of the shank in the Jeoffroy case? A. Yes, I reread the testimony.

Q. Can you tell us now how you mounted the dial indicator? A. The dial indicator was mounted on the stirrup at the rear of the hinged member and with arms extending to approximately the center the indicator was brought to bear on the bottom part of the shank.

Q. I show you the hinge member of Jeoffory, Plaintiffs' [1037] Exhibit D-1. Can you point out on that exhibit as to how the dial indicator was mounted? A. Well, this is the stirrup (indicating), and it was mounted at this point in the first case.

Q. What would have been mounted at that point? A. The attachment for the dial indicator, by means of the arms that are furnished with one of these instruments, the support was extended so that it reached the underside of the shank, touched the center of the under—

Q. Center of the under—did you complete your sentence? A. The under portion of the shank.

Q. With your knowledge of this art through the last 11 years and your long experience with agricultural implements, in your opinion would the 798 structure be obvious in view of the prior art? A. No, I don't think it would be.

Mr. Gold: That is all.

Re-Cross-Examination by Mr. Morris.

Q. Mr. Fenton, I just have a couple of questions. On all of these exhibits which have just been identified here today, beginning with R and going through W, those are all just some freehand sketches intended to indicate theoretical positions at various stages of the 798 type structure, are they not? [1038] A. Yes; as reinforced, however, by our experience.

Q. Well, reinforced by your experience, of course your experience you are talking about has been with the Jeoffroy HT-5 and HT-5-A type clamps, has it not? A. Yes.

Q. You have stated, I believe, in connection with one of the exhibits, that the dotted line is intended to indicate direction of flex only and not magnitude? A. That is right.

Q. That is true of the other one also? A. Yes.

Q. That would be true of both Exhibit T and Exhibit W, would it not? A. Yes, sir.

Q. Just one other thing. You don't intend to say to the Court here that the actual stress lines or bending areas of the shank would be precisely as you set them out here in these dotted lines, do you? A. No.

Q. Now then, also these drawings do not attempt to show anything that might happen insofar as flex of the hinge member itself is concerned, do they? A. They do not, no, sir.

Q. And you have not attempted to measure or compute that at any time, have you? [1039] A. No.

Q. So this then again would be a theoretical representation of flex in the shank alone? A. The shank, yes, sir.

Mr. Morris: That is all, thank you, sir.

Re-Direct Examination by Mr. Gold.

Q. Mr. Fenton, is it your opinion that the structure shown in the drawings would flex in the manner shown in Plaintiffs' Exhibits T and W? A. Yes, sir.

Mr. Gold: That is all.

(Witness excused.)

Mr. Fishburn: We would like to introduce in evidence Plaintiffs' Exhibits S, T, U, V and W.

Mr. Morris: No objection.

The Court: Very well. They will be admitted.

(Plaintiffs' Exhibits S, T, U, V and W Were Received in Evidence.)

Mr. Fishburn: We would also like to introduce in evidence the interrogatories if that is necessary, Your

Honor. What is your rule with respect to the interrogatories? They are filed in this case and answers filed. Do you wish those given exhibit numbers?

[1040] The Court: They are introduced in the case, admitted in the case unless there is some objection, of course, which can be ruled on as pertains to particular parts of the questions or answers. You can consider them introduced if you want to, or you can introduce them.

* * *

[1041] The Court: * * * They are generally considered part of the pleadings in the case, they are in the case.

* * *

Mr. Fishburn: Then we will just consider them in evidence as pleadings?

The Court: If that is agreeable to both sides, they will be so considered.

Mr. Morris: That is all right.

Mr. Fishburn: I would like to offer in evidence the film which was shown before as the Plaintiffs' Exhibit X.

[1042] The Court: Any objection?

Mr. Morris: No, Your Honor. Of course 75 percent of it is relatively immaterial to the case, but I have no objection to it.

The Court: Very well. It will be admitted.

(Plaintiffs' Exhibit X Was Received in Evidence.)

* * *

[1045] Mr. Fishburn: That is all plaintiffs' rebuttal, Your Honor.

Mr. Morris: Defendants will offer no surrebuttal.

* * *

(Adjournment.)